

## SEQUENCE LISTING

1020 Rec'd PCT/PTO 10 NOV 2005

<110> EXELIXIS, INC.  
<120> MARKS AS MODIFIERS OF THE PTEN PATHWAY AND METHODS OF USE  
<130> EX04-044C-PC  
<150> US 60/479,768  
<151> 2003-06-19  
<160> 18  
<170> PatentIn version 3.2

<210> 1  
<211> 2349  
<212> DNA  
<213> Homo sapiens

<400> 1  
atggttatca tgtcgagtt cagcgccgac cccgcgggcc agggtcaggg ccagcagaag 60  
ccccctccggg tgggtttta cgacatcgag cggaccctgg gcaaaggcaa cttcgccgtg 120  
gtgaagctgg cgcggcatcg agtcaccaaa acgcagggttgc caataaaaat aattgataaa 180  
acacgattag attcaagcaa ttggagaaaa atctatcgat aggttcagct gatgaagtt 240  
ctgaaccatc cacacatcat aaagctttac caggttatgg aaacaaagga catgctttac 300  
atcgtaactg aatttgctaa aaatggagaa atgtattatt tgacttccaa cgggcacctg 360  
agtgagaacg aggccggaa gaagttctgg caaatccgt cggccgtgaa gtactgtcac 420  
gaccatcaca tcgtccacccg ggacctcaag accgagaacc tcctgctgga tggcaacatg 480  
gacatcaacg tggcagattt tggatttggg aatttctaca agtcaggaga gcctctgtcc 540  
acgtgggtgtg ggagcccccc gatatggccccc ccggaagtct ttgaggggaa ggagtatgaa 600  
ggccccccacg tggacatctg ggttaggcctg ggcgtgggtgc tgcgtccct ggtctgggt 660  
tctctccct tcgtatggcc taacctgccc acgctgagac agcgggtgt ggagggccgc 720  
ttccgcaccc ccttcttcat gtctcaagac tgcgtggagcc tgatccggcc catgctgggt 780  
gtggaccccg ccaggccat caccatggcc cagatccggc agcaccgggt gatgcgggt 840  
gagccctgtc tgccgggacc cccctggccc gccttctccg cacacagcta cacctccaa 900  
ctggggcact acgatgagca ggcgtgggt atcatgcaga ccctgggtgt ggaccggcag 960  
aggacgggtgg agtcaactgca aaacagcagc tataaccact ttgctggcat ttattaccc 1020  
ctcccttgagc ggctcaagga gatatggaaat gcccagtgcg cccggccgg gcctggcagg 1080  
cagccggcc ctcggagctc ggacctcagt ggtttggagg tgccctcagga aggtcttcc 1140  
accgaccctt tccgacccctgc cttgctgtgc cccgacccgc agaccttgggt gcagtcgtc 1200  
ctccaggccg agatggactg tgagctccag agctcgctgc agcccttgtt cttccgggt 1260

gatgccagct gcagcggagt gttccggccc cggcccggt ccccaagcag cctgctggac 1320  
 acagccatca gtgaggaggc cagggcagggg ccgggcctag aggaggagca ggacacgcag 1380  
 gagtcctgc ccagcagcac gggccggagg cacaccctgg ccgaggtctc cacccgcctc 1440  
 tccccactca cgcgcctatg tatagtcgtc tccccctcca ccacggcaag tcctgcagag 1500  
 ggaaccagct ctgacagttg tctgaccttc tctgcgagca aaagccccgc ggggctcagt 1560  
 ggcacccccc gcaactcaggg gctgctggc gcctgctccc cggtcaggct ggcctcgccc 1620  
 ttccctgggt cgcagtcgc caccctcgtg ctgcaggctc aggggggctt gggaggagct 1680  
 gttctgctcc ctgtcagctt ccaggagggc cggcggcgt cggacacctc actgactcaa 1740  
 gggctgaagg ctttcggca gcagctgagg aagaccacgc ggaccaaagg gtttctggg 1800  
 ctgaacaaaa tcaaggggct ggctgcctag gtgtgcctagg ccccgccag cggggccagc 1860  
 agggggccggcc tgagccctt ccacgcccct gcacagagcc caggcctgca cggcggcgc 1920  
 gccggcagcc gggagggctg gagcctgctg gaggaggctc tagagcagca gaggctgctc 1980  
 cagttacagc accaccctggc cgtgcaccc ggctgctccc agggccccc gccggccct 2040  
 gccccgtttg tgatcgcccc ctgtgatggc cctggggctg ccccgctccc cagcaccctc 2100  
 ctcacgtcgg ggctcccgct gctgccc ccaactcctgc agaccggcgc gtccccggtg 2160  
 gcctcagcgg cgcagtcctt ggacacacac ctgcacattt gcacccggccc caccgcctc 2220  
 cccgctgtgc ccccacacag cctggccagg ctggcccccag gttgtgagcc cctggggctg 2280  
 ctgcaggggg actgtgagat ggaggacctg atgcctgtt ccctaggcac gtttgcctg 2340  
 gtgcagtga 2349

<210> 2  
 <211> 2607  
 <212> DNA  
 <213> Homo sapiens

<400> 2  
 gggactgggg gctccgggg cacggatgga gccgaccgcg ggccgggggg ggcgtgggtgg 60  
 gctctgagct ctgtgctggcc cccgcaggctgc ggcggagcc atggttatca tgcggagtt 120  
 cagcgcggac cccgcggggc agggtcaggg ccagcagaag cccctccggg tgggtttta 180  
 cgacatcgag cggaccctgg gcaaaggcaa cttcgccgtg gtgaagctgg cgccgcacatcg 240  
 agtcacaaaa acgcaggtag caataaaaaat aattgataaa acacgattag attcaagcaa 300  
 tttggagaaa atctatcgta aggttcagct gatgaagctt ctgaaccatc cacacatcat 360  
 aaagctttac caggttagtta tggaaacaaa ggacatgctt tacatcgta ctgaatttgc 420  
 taaaaatgga gaaatgtttg attatttgac ttccaaacggg cacctgagtg agaacgaggc 480

gcggaagaag ttctggcaaa tcctgtcgcc	cgtggagtac tgtcacgacc atcacatcg	540
ccaccgggac ctcaagaccg agaacctcct	gctggatggc aacatggaca tcaagctggc	600
aggcacggaa gattttggat ttgggaattt	ctacaagtca ggagagcctc tgtccacgtg	660
gtgtgggagc cccccgtatg ccgcggcga	agtcttttag gggaggagt atgaaggccc	720
ccagctggac atctggagcc tggcggtgg	gctgtacgtc ctgtctgcg gttctctcc	780
tcccttcgat gggcctaacc tgccgacgct	gagacagcgg gtgtggagg gccgcttccg	840
catccccttc ttcatgtctc aagactgtga	gagcctgatc cgccgcatgc tggtggtgga	900
ccccggcagg cgcatcacca tcgcccagat	ccggcagcac cggtgatgc gggctgagcc	960
ctgcttgcgg ggaccgcct gccccgcctt	ctccgcacac agtacacac ccaacctggg	1020
cgactacat gaggcggcgt tgggtatcat	gcagaccctg ggcgtggacc ggcagaggac	1080
ggtggagtca ctgcaaaaca gcagctataa	ccactttgct gccatttatt acctcctcct	1140
tgagcggctc aaggagtatac ggaatgccc	gtgcggccgc cccggccctg ccaggcagcc	1200
gccccctcgg agctcggacc tcagtggttt	ggaggtggtg ctcaggaag gtctttccac	1260
cgaccctttc cgacctgcct tgctgtgccc	gcagccgcag accttggtc agtccgtcct	1320
ccaggcccgag atggactgtg agctccagag	ctcgctgcag tggcccttgc tttcccggt	1380
ggatgccage tgcagcggag tggccggcc	ccggcccggt tcccaagca gcctgctgga	1440
cacagccatc agtgaggagg ccaggcaggg	ccggggcccta gaggaggagc aggacacgca	1500
ggagtcctcg cccagcagca cggccggag	gcacaccctg gccgaggctc ccaccgcct	1560
ctccccactc accgcgccat gtaaggtctc	ccctccacc acggcaagtc ctgcagaggg	1620
aaccagctct gacagttgtc tgacattctc	tgcgagcaaa agcccccggg ggctcagtgg	1680
caccccgcc actcaggggc tgctggcgc	ctgctcccg gtcaggctgg ctcgcctt	1740
cctggggtcg cagtccgcca ccccagtgtc	gcaggctcag gggggcttgg gaggagctgt	1800
tctgctccct gtcagcttcc aggagggacg	gccccgtcg gacacctcac tgactcaagg	1860
tgggctgaag gcctttcgcc agcagctgag	gaagaccacg cggaccacaaag ggtttctggg	1920
actgaacaaa atcaaggggc tggctgcca	ggtgtgccag gtcctgcca gccggccag	1980
cagggggccg ctgagccct tccacgcccc	tgcacagagc ccaggcctgc acggccggc	2040
agccggcagc cgggaggggct ggagcctgtc	ggaggaggtg ctagagcagc agaggaggct	2100
gtcccagtta cagcaccacc cggccgctgc	accggctgc tccaggccc cccagccggc	2160
cctgcccccg tttgtgatcg cccctgtga	tggccctggg gtcggccgc tccccagcac	2220
cctcctcacg tcggggctcc cgctgctgcc	gccccactc ctgcagaccc ggcgtcccc	2280
ggtggcctca gccggccagc tcctggacac	acacctgcac attggcaccg gccccacccg	2340

cctccccgct gtgccccac cacgcctggc caggctggcc ccaggttgtg agccccctggg 2400  
 gctgctgcag ggggactgtg agatggagga cctgatgccc tgcgtccctag gcacgtttgt 2460  
 cctggtgcag tgagggcagc cctgcacccctt ggcacggaca ctgactctta cagcaataac 2520  
 ttcagaggag gtgaagacat ctggcctcaa agccaagaac tttctagaag cggaaataaagc 2580  
 aatacgttag gtgtttggc ttttttag 2607

<210> 3  
 <211> 2427  
 <212> DNA  
 <213> Homo sapiens

<400> 3  
 gttggctctg agctctgtgc ggcccccgcag gtgcgcgcgg agccatggtt atcatgtcgg 60  
 agttcagcgc ggaccccgcg gcccagagtc agggccagca gaagccccctc cgggtgggtt 120  
 ttacgacat cgagcggacc ctgggcaaag gcaacttcgc ggtgtgtgaag ctggcgcggc 180  
 atcgagtcac caaaacgcag gttgcaataa aaataattga taaaacacga ttagattcaa 240  
 gcaatttggaa gaaaatctat cgtgagggtc agctgatgaa gcttctgaac catccacaca 300  
 tcataaagct ttaccagggtt atggaaacaa aggacatgtt ttacatcgctc actgaatttg 360  
 ctaaaaatgg agaaatgttt gattatttga cttccaacgg gcacctgagt gagaacgagg 420  
 cgcggaaagaa gttctggcaa atccctgtcgg cctgtggagta ctgtcacgac catcacatcg 480  
 tccaccggga cctcaagacc gagaacctcc tgctggatgg caacatggac atcaagctgg 540  
 cagattttggg atttggaaat ttctacaagt caggagagcc tctgtccacg tgggtgtggaa 600  
 gccccccgta tgccgcccccg gaagtctttg aggggaagga gtatgaaggc ccccaagctgg 660  
 acatctggag cctggcgctg gtgctgtacg tcctggctcg cgggtctctc cccttcgatg 720  
 ggcctaacct gcccacgctg agacagcggg tgctggaggg cccgttccgc atcccctct 780  
 tcatgtctca agactgtgag agcctgatcc gcccacatgtt ggtgtggac cccgcccaggc 840  
 gcatcaccat cgcggcggatc cggcggcggacc ggtggatgcg ggctgagccc tgcttgcgg 900  
 gacccgcctg cccgccttc tccgcacaca gctacacccctc caacctgggc gactacgatg 960  
 agcaggcgct gggtatcatg cagaccctgg gcgtggaccc gcaaggacgc gtggagtcac 1020  
 tgcaaaacag cagctataac cactttgtcg ccatttattt cctccctctt gagcggctca 1080  
 aggagtatcg gaatgcccag tgccggccgc cccggccctgc caggcagccg cggcctcgga 1140  
 gctcgacccct cagtggtttg gaggtgcctc aggaaggctt ttccaccgac cctttccgac 1200  
 ctgccttgcgt gtgcccccgag cccgcacatgtt gggtgcagtc cgtcctccag gcccggatgg 1260  
 actgtgagct ccagacgtcg ctgcagtcgc cttgtttttt cccgggtggat gcccacatgtc 1320  
 gccggagtggtt cccggcccccgg cccgtgtccc caagcggatc gttggacaca gccatcgtg 1380

aggaggccag	gcaggggccc	ggcttagagg	aggagcagga	cacgcaggag	tccctgccc	1440
gcagcacggg	ccggaggcac	accctggccg	aggtctccac	ccgcctctcc	ccactcacccg	1500
cgcctatgtat	agtctctcc	ccctccacca	cggcaagtcc	tgcagaggg	accagctcg	1560
acagttgtct	gaccttctct	gcgagcaaaa	gccccgcggg	gctcagtggc	accccgccca	1620
ctcaggggct	gctggcgcc	tgctccccgg	tcaggctggc	ctgccttc	ctggggtcgc	1680
agtccgcccac	cccagtgtcg	caggctcagg	ggggcttggg	aggagctgtt	ctgctccctg	1740
tcaagttcca	ggagggacgg	cggcgctcg	acacctact	gactcaaggg	ctgaaggcct	1800
tccggcagca	gctgaggaag	accacgcgga	ccaaagggtt	tctggactg	aacaaaatca	1860
agggctggc	tcgcaggtg	tgccaggtcc	ctgcccgg	ggcagcagg	ggcggcctga	1920
gcccccttcca	cgcgcctgca	cagagcccag	gcctgcacgg	cggcgacgg	ggcagccggg	1980
agggctggag	cctgctggag	gaggtgctag	agcagcagag	gctgctccag	ttacagcacc	2040
acccggccgc	tgcacccggc	tgctccctagg	ccccccagcc	ggccctgtcc	ccgtttgtga	2100
tgcgccttgc	tgtggccct	ggggctgccc	cgcctccctag	cacccttc	acgtcgccggc	2160
tcccgctgt	gcccgccttca	ctccctgcaga	cggcgcgctc	cccggtggcc	tcagcggcgc	2220
agctccctgga	cacacacccgt	cacattggca	cggccccac	cgcctcccc	gctgtgcctt	2280
caccacgcct	ggccaggctg	ccccaggtt	gtgagccct	ggggctgctg	cagggggact	2340
gtgagatgga	ggacctgtat	ccctgtccc	tagcacgtt	tgtctggtg	cagtgaggc	2400
agccctgcat	cctggcacgg	acctgac				2427

<210> 4  
 <211> 2352  
 <212> DNA  
 <213> Homo sapiens

<400> 4						
atggttatca	tgtcgagtt	cagcgccgac	cccgccggcc	agggtcaggg	ccagcagaag	60
ccctccggg	tgggtttta	cgacatcgag	cggaccctgg	gcaaggcaa	cttcgcggtg	120
gtgaagctgg	cgcggcatcg	agtcaccaaa	acgcaggttg	caataaaaat	aattgataaa	180
acacgattag	attcaagcaa	tttggagaaa	atctatctg	agttcagct	gatgaagctt	240
ctgaaccatc	cacacatcat	aaagcttac	caggatatgg	aaacaaagga	catgcttac	300
atcgtcactg	aatttgctaa	aaatggagaa	atgtttgatt	atttgacttc	caacggcac	360
ctgagtgaga	acgaggcgcg	gaagaagttc	tggcaaatcc	tgtcgccgt	ggagtaactgt	420
cacgaccatc	acatcgcca	ccgggacctc	aagaccgaga	acotcctgct	ggatggcaac	480
atggacatca	agctggcaga	ttttggattt	ggaaatttct	acaagtcagg	agagcetctg	540

tccacgtgg	gtggggagccc	cccgatatgcc	gccccggaa	gctttgaggg	gaaggaggat	600
gaaggcccc	agctggacat	ctggagcc	ggcgtgg	tgtacgt	ctt ggt	660
tctctcc	tcgatgggc	taacctg	ccg acgctg	agacgggt	gct ggac	720
ttccgc	atcc	cttcat	gtctcaagac	tgtgagag	cc	780
gtggac	ccaggcg	cat caccat	cgcc	cagatcc	ggatgcgg	840
gagcc	ctgt	gc	ccctgc	acacagct	a	900
ctgggc	act acgatg	gac	ggcg	atcatgc	aga	960
aggacgg	ttg	cttgc	tttgc	ccctgg	ggac	1020
ctc	tttg	gagc	ggctca	atcg	aaac	1080
cagcc	ggc	ctcg	ggatcg	ccctgg	ccat	1140
accgac	cttgc	actgc	tttgc	ccgc	agac	1200
ctcc	aggcc	atgg	actcc	gtcg	tttgc	1260
gtggat	gcca	gtgc	acgc	gtgttcc	gg	1320
gacacag	cca	tc	actg	gg	gg	1380
caggag	gtcc	cc	ggc	gg	gg	1440
ctct	cccc	ac	cc	cc	cc	1500
gagg	aa	cc	cc	cc	cc	1560
atggc	accc	cc	gg	cc	cc	1620
cc	tt	cc	gg	cc	cc	1680
gctgtt	ctc	tc	cc	cc	cc	1740
caagg	gct	tc	cc	cc	cc	1800
ggact	gaaca	aa	atca	agg	gg	1860
agcagg	ggcg	cc	ct	cc	cc	1920
gcag	ccgg	cc	gg	cc	cc	1980
ctcc	agg	tt	ac	cc	cc	2040
cctg	cc	cc	cc	cc	cc	2100
ctcc	tcac	gt	cc	cc	cc	2160
gtgg	cc	cc	cc	cc	cc	2220
ctcc	cc	cc	cc	cc	cc	2280
ctg	ctgc	agg	gg	actgt	g	2340
ctgg	tg	ca	gg	actgt	ga	2352

<210> 5  
 <211> 4726  
 <212> DNA  
 <213> Homo sapiens

<400> 5  
 ggcagccgga gcagtaggca cccgagcgcg cccagcgcc gagcggcg 60  
 tggcgctcc ggtggcgccg gaggtgcgcg cggagccatg gttatcatgt cgagttcag 120  
 cgcggacccc gccccccagg gtcagggcca gcagaagccc ctccgggtgg gttttacga 180  
 catcgagcgg accctggca aaggcaactt cgcgggtgt aagctggcgc ggcatcgagt 240  
 caccaaaaacg caggttgc aaataataat tgataaaaaca cgattagatt caagcaattt 300  
 ggagaaaaatc ttcgtgagg ttcagctgtat gaagcttctg aaccatccac acatcataaa 360  
 gtttaccag gttatggaaa caaaggacat gtttacatc gtcactgaat ttgctaaaaa 420  
 tggagaaaatg tttgattatt tgacttccaa cgggcacctg agtggaaacg aggccggaa 480  
 gaagttctgg caaatccgt cggccgtgga gtaactgtcac gaccatcaca tcgtccaccg 540  
 ggacctaag accgagaacc tcctgctgga tggcaacatg gacatcaagc tggcagattt 600  
 tggatttggg aatttctaca agtcaggaga gctctgtcc acgtgggtgt ggagcccccc 660  
 gtatccgc ccgaaatgtt ttgagggaa ggagtatgaa ggcccccagc tggacatctg 720  
 gaggctggc gtgggtgtt acgtccgtt ctgcgttct ctcccttgc atggcctaa 780  
 cctggcggc acgtggacacg cgggtgctgga gggccgcttc cgcatccccct tcttcatgtc 840  
 tcaagactgt gagagcctga tccggccat gctgggtgt gaccccgcca ggccatcac 900  
 catcgccca gatccggcacc accgggtggat gggggctgag ccctgcttgc cgggaccggc 960  
 ctggcccgcc ttctccgcac acagctacac ctccaaacctg ggcgactacg atgaggcaggc 1020  
 gctgggtatc atgcagaccc tggcgctgga cggcagagg acgggtggagt cactgaaaaa 1080  
 cagcagctat aaccactttt ctgcattta ttaccttccctt cttgagccgc tcaaggagta 1140  
 tcggaatgcc cagtgcggcc gccccggcc tgccaggcag ccggccgctc ggagctcgga 1200  
 cctcagtggt ttggaggtgc ctcaggaagg tctttccacc gacccttcc gacctgcctt 1260  
 gctgtccccg cagccgcaga ccttggtgca gtccgtccctc caggccgaga tggactgtga 1320  
 gctccagacgc tcgctgcagt gcccctgtt cttccgggt gatgccagct gcagccggagt 1380  
 gttccggccc cggcccggtgt ccccaagcag cctgctggac acagccatca gtgaggaggc 1440  
 caggcagggg cccggccctag aggaggagca ggacacgcag gagtccctgc ccagcagcac 1500  
 gggccggagg cacaccctgg ccgaggtctc caccggccctc tcccccactca cccgcgcattg 1560  
 tatacgctc tcccccctcca ccacggcaag tcctgcagag ggaaccagct ctgacagttt 1620  
 tctgaccttc tctgcgagca aaagccccgc ggggctcagt ggaccccccgg ccactcaggg 1680

gctgctgggc gcctgtcccc cggtcaggct ggctcgccc ttccctggggt cgcagtccgc 1740  
 caccccagtg ctgcaggctc aggggggctt gggaggagct gttctgtcc ctgtcagctt 1800  
 ccaggagggaa cggcgggcgt cgacacaccc actgactcaa gggctgaagg ctttcggca 1860  
 gcagctgagg aagaccacgc ggaccaaagg gtttctggga ctgaacaaaa tcaaggggct 1920  
 ggctcgccag gtgtgcagg tccctgccc cggggccagc agggggggcc tgagccccctt 1980  
 ccacgccccct gcacagagcc caggcctgca cggcggcgca gccggcagcc gggagggctg 2040  
 gagcctgctg gaggaggtgc tagagcagca gaggctgctc cagttacagc accacccggc 2100  
 cgctgcaccc ggctgtcccc agggccccc gccggccccct gcccgtttg tgatcgcccc 2160  
 ctgtatggc cctggggctg ccccgctccc cagcacccctc ctacacgtcgg ggctcccgct 2220  
 gctgccgccc ccactcctgc agacccggcgc gtccccggtg gcctcagcgg cgtagctccct 2280  
 ggacacacac ctgcacattg gcacccggccc caccggccctc cccgctgtgc ccccacccacg 2340  
 cctggccagg ctggcccccag gttgtgagcc cctggggctg ctgcaggggg actgtgagat 2400  
 ggaggacctg atgcctgtc ccttaggcac gtttgccttg gtgcagttag ggcagccctg 2460  
 catcctggca cggacactga ctcttacagc aataacttca gaggaggtga agacatctgg 2520  
 cctcaaagcc aagaactttc tagaagcgaa ataagcaata cgtaggtgt tttggctttt 2580  
 tagtttattt ttgttttattt ttttcttgc actgagtgac ctcaactttg agtagggact 2640  
 gaaaacttta ggaagaaaga taattgaggg gcgtgtctgg gggggggggc aggagggggag 2700  
 cgggggtggag ggaacacgtg cagtggcgtg gtgtgggat ctggccccct ctctctgggt 2760  
 tgcgtgggt tgagatgatt acctcgacg totacggaaa cgagcggggcg cattgttgtc 2820  
 cgcttgcgtg tgcgtgtgtg tgcgtgtgtg tgcgtgtgc ttgattacta tccatttctt 2880  
 tagtcaacgc tctccacttc ctgatttctg cttaaggaa aactgtgaac tttctgtttc 2940  
 atgtatcagt tttaaagcag cccaggcaaa gatcatctac agattctagg aattctctcc 3000  
 cctgaaatca aaacctggaa gactttttt tcttattttt gttgagaagt ttcataaaact 3060  
 gctcaaggat tagtttcca ggactctgctg gaggAACGGC aggaagaacc tcagagaggg 3120  
 cagaggtgac ttcaaagtgc tggggactcc gtccctgggg tcacttggcc ctgagccccct 3180  
 gcgtggccctt gcggaaagccc agaagcttct tctgtgtcga cctcccgttt cgcgtgtgc 3240  
 tgcgtttat gcatttcatg atggggtcca acaagaacac ctgacttggg tgaagttgt 3300  
 caatatttggaa ggctgactgt agggctgggc agctgggaga caggctcatg gctcatggct 3360  
 catggctcag ggccggcgtcc gccatggggc gggacccccc tccccacccc ccacctaggc 3420  
 tttttgggtt ttgttcaagg aaggtaaaagt gagaggtta ggtcagtgtt tttaagttt 3480  
 tttttttttt tttaaagcaaa tccctgtatat gtatctacat gggagacagg tagacactac 3540

ttatggta cattttgtac tacacgttg tttccagg ttcagttcc ctgcgtcctg 3600  
 ttgttaagaa gcgtccctgt cagcacaggt gtgcatttag gaaggggccc cagggcctc 3660  
 gctccctcag cactgggtg gaggcggcag gaaggggcgg cccttacctg gcaggtctgg 3720  
 ggcacaccc agcaggtgga ctccgtgggg ctccaccagg cagaaggcctt tggaggca 3780  
 cgaaggcaat gctgctccct gaggccagtc cccgcggcc aaccggccccc aggtgcctc 3840  
 agctacttcg gcttcttaaa ccctgcagtgt taaaacagag gcattgagaa aggggaaagg 3900  
 cgggtatccc taaaagccaa agattgaccc agttacttga gggtagggag gggcccgag 3960  
 tgcaggaggg tgcattccctg gcctgctgggt gcccacccggg ggctgtgcct gtggccggcc 4020  
 gcagggaaggc tggctgcccc catttctgtct gctgctgctg ctgtgtctt gtggctgttt 4080  
 caaagactgg gcgaaaggct gtcggaggg cagaccagg tgcctgccc agagaaaaca 4140  
 ccaaagtctc ctgttcgctc ataaaagaagt ttttggatg ggagagaatc cagaccatct 4200  
 tggggcagcc aggccttgc ctcatccctt acagaggtag cacaattgtat tccaaacacaa 4260  
 aacttccctt tttaaaatg atttctgttc taatgccata gatcaaaggc ctcagaaacc 4320  
 attgtgtttt tctcttttga agcaatgaca agcactttac tttcacgggtg gttttgttt 4380  
 tttcttattt ctgtggaaacc tctttggag gacgttaaag gctgtttta ctgtttttt 4440  
 taagagtgtg ttagtgggtgt ttttagatt tcttgacagt gctgtaatac agacggcaat 4500  
 gcaatagccct atttaaagac actacgtgat ctgattgaga tgtacatagt tttttttttt 4560  
 accataactg aattatttta tctctttagt taacatgaga aatgtatgcc aaatgattag 4620  
 ttgatgtatg ttttttaatt taatatttaa ataaaatattt tggaggtata aaaaaaaaaaa 4680  
 aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaa 4726

<210> 6  
 <211> 4762  
 <212> DNA  
 <213> Homo sapiens

<400> 6  
 atgcggcgcg gccccggagg cagcagcagc ggccggccgc gcccggcggcag taggcaccccg 60  
 agcagcgcca gccccggaggc gggccggcttc ctggcctggg cgctccgggtg gcccggcggagg 120  
 tgccgcggc gccatggta tcatgtcgga gttcagcgcg gacccggcgg gcccgggtca 180  
 gggccaggcag aagccctcc ggggggttt ttacgacatc gagcggaccc tgggcaaaagg 240  
 caacttcgctg gtggtaaaggc tggcggcggca tcgagtcacc aaaacgcagg ttgcaataaa 300  
 aataattgtat aaaaacacat tagattcaag caatttggag aaaatctatc gtgaggttca 360  
 gctgatgaag cttctgaacc atccacacat cataaagctt taccaggta tggaaacaaa 420

ggacatgctt tacatcgta ctgaattgc taaaaatgga gaaatgtttg attatttgc	480
ttccaacggg cacctgagtg agaacgaggg gcggagaagaag ttctggcaaa tcctgtcgcc	540
cgtggagttac tgtcacgacc atcacatcgat ccacccggac ctcaagaccg agaacctcct	600
gctggatggc aacatggaca tcaagctggc agatttgga tttggaaatt tctacaagtc	660
aggagagcct ctgtccacgt ggtgtggag ccccccgtat gccgccccgg aagtctttga	720
gggaaaggag tatgaaggcc cccagctggc catctggagc ctggcggtgg tgctgtacgt	780
cctggctctgc ggttctctcc cttcgatgg gcctaacctg ccgacgctga gacagcgggt	840
gctggaggcgc cgcttccgca tccccttctt catgtctcaa gactgtgaga gcctgatccg	900
ccgcacatgtg gtggtgacc cgcgcaggcg catcaccatc gcccagatcc ggcagcacccg	960
gtggatgcgg gctgagccct gttggccggg acccgctgc cccgccttct ccgcacacag	1020
ctacacctcc aacctggcg actacgatga gcaggcgctg ggtatcatgc agaccctggg	1080
cgtggaccgg cagaggacgg tggagtcaact gcaaaacacgc agctataacc actttgtgc	1140
catttattac ctcttccttg agcggctcaa ggagtatcggt aatgcccagt ggcggccccc	1200
cgggcctgcc aggcagccgc ggcctcgag ctggacactc agtggtttgg aggtgcctca	1260
ggaaggcttt tccaccgacc cttccgacc tgccttgctg tgcccgacgc cgcagacctt	1320
ggtgcagtcc gtctccagg ccgagatgga ctgtgagctc cagagctgc tgcaagtggcc	1380
cttggcttc cgggtggatg ccagctgcag cggagtgttc cggccccggc cctgtcccc	1440
aagcagccctg ctggacacag ccatcagtga ggaggccagg cagggggccgg gcctagagga	1500
ggagcaggac acgcaggagt ccctgcccag cagcacgggc cggaggcaca ccctggccga	1560
ggtctccacc cgcctctccc cactcaccgc gccatgtata gtctgtctccc cctccaccac	1620
ggcaagtcct gcagagggaa ccagctctga cagttgtctg accttctctg cgagcaaaag	1680
ccccgggggg ctcagtggca cccggccac tcagggctg ctggcgctt gctccccgg	1740
caggctggcc tcgcccattcc tgggtcgca gtccgcccacc ccagtgtgc aggtcagg	1800
gggcttggga ggagctgttc tgctccctgt cagttccag gagggacggc gggcgctgg	1860
cacccactg actcaaggcc tgaaggcctt tcggcagcag ctgaggaaga ccacgcggac	1920
caaagggttt ctgggactga acaaaatcaa gggctggct cggcagggtgt gccaggtccc	1980
tgcctgggg gccagcaggc gcccctgag cccctccac gcccctgcac agagccagg	2040
cctgcacggc ggcgcagccg gcagccggga gggctggagc ctgctggagg aggtgctaga	2100
gcagcaggagg ctgctccagt tacagcacca cccggccgt gcacccggct gctcccaggc	2160
cccccagccg gcccctgccc cgtttgtat cggccctgt gatggccctg gggctgcccc	2220
gctcccccaggc accctccatca cgtcgccggct cccgcgtgc cggccccac tcctgeagac	2280

cggcgcgtcc	ccgggtggcct	cagcggcgca	gctcctggac	acacacctgc	acattggcac	2340
cgccccccacc	gcacccccc	ctgtgcccc	accacgcctg	gccaggctgg	ccccagggtt	2400
tgagccctg	gggctgctgc	agggggactg	tgagatggag	gacctgatgc	cctgctccct	2460
aggcacgttt	gtcctggtgc	agtgagggca	gccctgcata	ctggcacgga	cactgactct	2520
tacagcaata	acttcagagg	aggtgaagac	atctggcctc	aaagccaaga	actttctaga	2580
agcgaataa	gcaatacgtt	aggtgttttg	gtttttttagt	ttatttttgt	tttatttttt	2640
tcttgcactg	agtgacacta	actttgagta	gggactggaa	actttaggaa	gaaagataat	2700
tgaggggcgt	gtctggggc	ggggcagga	ggggagcggg	gtggaggaa	cacgtgcagt	2760
gccgtggtgt	ggggatctcg	gccctctct	ctgggttcgt	cgtggtttag	atgattacct	2820
cggacgtcta	cgaaaacgag	cggcgcatt	gttgcgcgt	tgtgtgtgt	tgtgtgtgt	2880
tgtgtgtgcg	cgtgcattga	ttactatcca	tttcttttagt	caacgctctc	cacttcctga	2940
tttctgctt	aaggaaaact	gtgaacttto	tgttcatgt	atcagttta	aagcagccca	3000
ggcaaagatc	atctacagat	tcttaggaatt	ctctccctg	aaatcaaaaac	ctggaagact	3060
ttttttctt	attttagttt	agaagttca	taaaactgctc	aaggattagt	tttccaggac	3120
tctgcggagg	aacggcagga	agaacctcag	agagggcaga	ggtgacttca	aagtgctggg	3180
gactccgtcc	tgagggtcac	ttggccctga	gccctgcgt	gccctgcgg	aagcccagaa	3240
gtttttttct	gctgcacctc	ccgtttccgc	tgctgcgtac	gtttatgcac	ttcatgatgg	3300
ggtccaacaa	gaacacctga	cttgggtgaa	gttgcacat	attggaggct	gactgttaggg	3360
ctgggcagct	gggagacagg	ctcatggctc	atggctcatg	gctcagggcg	gtgcctgcca	3420
tgggcccggga	ccccccccc	caccccccac	ctaggcttt	tgggtttgt	tcaaggaaagg	3480
taaaagtgaga	ggtttaggtc	agtgtttta	agtttttgtt	tttttttaa	agcaaatcct	3540
gtatatgtat	ctacatggga	gacaggtaga	cactacttat	ttgttacatt	ttgtactaca	3600
cgtttgcgtt	ccaggttca	gttccctcg	ctcctgtgt	taagaagcgt	ccctgtcagc	3660
acaggtgtgc	attgaggaag	gggccccagg	gccttcgtc	cctcagact	ggggtgagg	3720
cggcaggaag	gggcggccct	tacctggcag	gtctggcgc	acctttagca	ggtggactcc	3780
gtggggctcc	accagccaga	aggctttgga	aggcaacgaa	ggcaatgctg	ctccctgagt	3840
ccagttcccg	cccccaaacc	cagcccaggt	gccttcagct	acttcggctt	cttaaaccct	3900
gcagtgtaa	acagaggcat	tgagaaaggg	gaaaggcggg	tatTTTTaaa	agccaaagat	3960
tgacccagtt	acttgagggt	agggaggcgg	gcccagtgca	ggaggctgca	tccctggcct	4020
gctggtgccc	accgggggct	gtgcctgtgc	cggccgcag	ggaagctggc	tgccccatt	4080
cctgctgctg	ctgctgctgc	tgctctgtgg	ctgtttcaaa	gactggcga	aaggctgtcc	4140

ggagggcaga ccaggtgcct tgccgcagag aaaacaccaa agtctctgt tcgctataa 4200  
 agaagttttt gggatgggag agaatccaga ccatcttggg gcagccaggc ccttgccttc 4260  
 attttacag aggtacaca attgattcca acacaaaact tccctttttt aaaaatgattt 4320  
 ctgttctaat gccatagatc aaaggcctca gaaaccattg tggtttctt ctttgaagca 4380  
 atgacaagca ctttacttgc acggtggtt ttgtttttc ttattgctgt ggaaccttt 4440  
 ttggaggacg ttaaaggcgt gtttacttg ttttttaag agtgtgtgat gtgtgtttt 4500  
 tagatttctt gacagtgcgt taatacagac ggcaatgcaa tagcctattt aaagacacta 4560  
 cgtgatctga tttagatgtt catagttttt ttttttacca taactgaatt attttatctc 4620  
 ttatgttaac atgagaatg tatgccaaat gattagttga tgtatgtttt ttaatttaat 4680  
 atttaaataa aatatttggg agtataaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 4740  
 aaaaaaaaaa aaaaaaaaaa aa 4762

<210> 7  
 <211> 6072  
 <212> DNA  
 <213> Homo sapiens

<400> 7  
 cagccgcgtc ccccaaaaaa ggcctccgc ggacccatgc ccggccgtat cggctactac 60  
 gagatcgacc gcaccatcgg caagggcaac ttgcgggtgg tcaagcgggc cacgcaccc 120  
 gtcaccaagg ccaagggtgc tatcaagatc atagataaga cccagctgga tgaagaaaaac 180  
 ttgaagaaga tttccggga agttcaaattt atgaagatgc ttgcaccc ccatatcatc 240  
 agctctacc aggttatgga gacagaacgg atgatttatac tggtagaca atatgctgt 300  
 ggagggggaaa tatttgacca cctggggcc catggtagaa tggcagaaaa ggaggcacgt 360  
 cggaaatca aacagatcgt cacagctgtc tattttgtc actgtcgaa cattgttcat 420  
 cgtgatttaa aagctgaaaa ttacttctg gatgccaatc tgaatatcaa aatagcagat 480  
 ttggtttca gtaacctt cactcctggg cagctgtga agacctgggtg tggcagccct 540  
 ccctatgctg cacctgaact cttgaagga aaagaatatg atggcccaa agtggacatc 600  
 tggagcctt gagttgtcct ctacgtgtt gtgtgggtg ccctgcccatt tgatggaaac 660  
 acactgcaga atctgcgggc cgcgtgtc agtggaaagt tcogcatccc atttttatg 720  
 tccacagaat gtgagcattt gatccgcatt atgtgggtt tagatccaa taagcgctc 780  
 tccatggagc agatctgcaa gcacaagtgg atgaagctag gggacgcccga tcccaacttt 840  
 gacaggttaa tagctgaatg ccaacaacta aaggaagaaa gacaggtgga cccctgaat 900  
 gaggatgtcc tcttggccat ggaggacatg ggactggaca aagaacagac actgcagtc 960  
 ttaagatcgt atgcctatgtt tcaactatgtt gcaatctaca gctgtgtg tgatcgacat 1020

aagagacata aaaccctgcg tctcgagca cttcctagca tgccccgagc cctggcctt	1080
caagcaccag tcaatatcca ggccggagcag gcaggtactg ctatgaacat cagcgttccc	1140
caggtgcagc tcatcaaccc agagaaccaa attgtggagc cgatgggac actgaattt	1200
gacagtgtatg agggtaaga gcttcccctt gaagcattgg tgcgtatggt gtaatgagg	1260
aggcacacag tgggtgtggc tgacccacgc acggaagttt tggaaatct gcagaagctc	1320
ctacctggct ttctggagt caaccccccag gctccattcc tgcaagggtggc ccctaattgt	1380
aacttcatgc acaacactgtt gcctatgcaa aacttgcac caaccggca acttgagtac	1440
aaggagcagt ctctcttaca gccggccacg ctacagctgt tgaatggat gggcccccctt	1500
ggccggaggg catcagatgg aggagccaac atccaaactgc atgcccagca gctgctgaag	1560
cgcccacggg gaccctctcc gcttgcacc atgacaccag cagtgccagc agttaccctt	1620
gtggacgagg agagctcaga cggggagcca gaccaggaag ctgtgcagag ctctacccat	1680
aaggactcca acactctgc ccccttactg gaggcttctt cccctgtgcg ccggttctca	1740
gatggggctg cgagcatcca ggccttcaaa gtcacactgg aaaaaatggg caacaacagc	1800
agcatcaaac agctgcagca ggagtgtgag cagctgcaga agatgtacgg gggcagatt	1860
gatgaaagaaa ccctggagaa gacccagcag cagcatatgt tataccagca ggagcagcac	1920
catcaaatttcc tccagcaaca aattcaagac tctatctgtc ctccctcagcc atctccaccc	1980
cttcaggctg catgtaaaaa tcagccagcc ctcccttaccc atcagctcca gaggtaagg	2040
attcagcctt caagccacc ccccaaccac cccaaacaacc atctctttag gcagcccagt	2100
aatagtccctt ccccatgag cagtgccttgc atccagccctt acggggctgc atcttcttcc	2160
cagtttcaag gcttacccctt ccgcagtgca atctttcagc agcaacactga gaactgttcc	2220
tctccctccca acgtggcact aacctgttttgg ggtatgcagc agcctgtca gtcacagcag	2280
gtcaccatccc aagtccaaaga gctgttgac atgctcagca acatgccagg cacagctgca	2340
ggctccagtg ggccggcat ctccatcagc cccagtgctg gtcaagatgca gatgcagcac	2400
cgtaccaacc tcatggccac cctcagctat gggcaccgtc cttgtccaa gcagctgagt	2460
gtgtacagtg cagaggctca cagcttgaac gtgaatcggt tctcccttgc taactacac	2520
caggcgcatt tacacccca tctgtttcg gaccgtccc ggggttcccc cagcagotac	2580
agcccttcaa caggagtggg gttcttccaa acccaagccc taaaagtccc tccacttgac	2640
caattccca cttccctcc cagtgcacat cagcagccgc cacactatac cacgtcgca	2700
ctacagcagg ccctgtgtc tcccacccgg ccagactata caagacacca gcaggtaccc	2760
cacatcccttca aaggactgtt tttcccccgg cattcgtca ccggccactc ggacatccgg	2820
ctggcccccacaa cagagtttgc acagcttattt aaaaggcagc agcaacaacg gcagcagcag	2880

cagcaacagc agcaacagca agaataccag gaactgttca ggcacatgaa ccaaggggat 2940  
 gcggggagtc tggctccag ccttggggga cagagcatga cagagcgcca ggctttatct 3000  
 tatcaaaatg ctgactctta tcaccatcac accagcccc agcatctgct acaaatacagg 3060  
 gcacaagaat gtgtctcaca ggcttcctca cccacccgc cccacggta tgctcaccag 3120  
 cggcactga tgcattcaga gagcatggag gaggactgct cgtgtgaggg ggccaaggat 3180  
 ggcttccaag acagtaagag ttcaagtaca ttgaccaaag gttgccatga cagccctctg 3240  
 ctctttagtca ccggtggacc tggggaccct gaatcttgc taggaactgt gagtcatgcc 3300  
 caagaattgg ggatacatcc ctatggtcat cagccaaactg ctgcattcag taaaataaag 3360  
 gtgcccagca gagagcctgt catagggAAC tgcatggata gaagttctcc aggacaagca 3420  
 gtggagctgc cggatcacaa tgggctcggg taccacgcac gcccctccgt ccatgagcac 3480  
 cacaggcccc gggccctcca gagacaccac acgatccaga acagcgacga tgcttatgt 3540  
 cagctggata acttgcagg aatgagtctc gtggctggg aagcaacttag ctctgcccgg 3600  
 atgtcgatg cagtttcag tcagtcttcg ctcatggca gocagcagtt tcaggatggg 3660  
 gaaaatgagg aatgtggggc aagcctggg ggtcatgagc acccagacct gagtgatggc 3720  
 agccagcatt taaactcctc ttgctatcca tctacgtgtt ttacagacat tctgctcagc 3780  
 tacaaggcacc ccgaagtctc cttcagcatg gagcaggcag gcgtgtaaaca agaaacagag 3840  
 agttttgtgt acagctggg aatgaaaagg ttgattttaa acccacagta tctagcagcg 3900  
 ttgtgccaaa ttgccttgc ttctctcc acccaaaaata tcacagctgc ttcttcacaa 3960  
 ttggttcat ccgtgtgctg ttctttggg ttctgagagg gtttgcctt gtttgcctgt 4020  
 atgaccaagt caccaaggaa ataaacagga agggaaatcca tggctccat ctttgcgtaa 4080  
 agtatattt agttgggtgt tttttttttt gtttgggggt ttgtgtttt tttttttttt 4140  
 ggtatgtttt cttccagagg tgatataactt tttttttttt cttccctttt tttttttttt 4200  
 tggctttttt tttgaaacag gagagcaaag cagtttaggt tcagaggcca gggccctcag 4260  
 ggcactccc tccctagcct tcacacgcag agcaccctcc atccccctgc attgctctc 4320  
 tggaaagca aatactaaag gatgccatcc tctggaaatcc taatggcagg caaaggggaga 4380  
 gaggaagggt gacggcttct ggcacttaga aaacaaaaag aaaaaaaaaa gagaaacccc 4440  
 caaggctgga acgcagagag gtctttactg ctggatcca cggaaaacat gtctgtccta 4500  
 gccaagatca tatgaagagt ttggcacgga ggctgagaat gacctggcat agatggttt 4560  
 ccagtttagga tggctcaatt tgagcctttg cttttgggtt ataactcagc tccctcttg 4620  
 taacctggaa agttgggtgc ctttatcatc ctgctggttt tatccatgga ctgaacaccc 4680  
 aacagcagtg cactatgctt tctatggcat ctttcattct cattttatat tggctataa 4740

aaaggattgt ttctccatat atatattata tatgtgtgta tataatataat ataatatatg 4800  
 tgtatata tattatataat ataatatata atataatata ttatataat attatata 4860  
 taatataat ataaaatata tatataatg ctctccctt tcagcctctt tgtcacaggg 4920  
 aagaagtgt a g g a g g t t g c c t t g c c t t a a c c t c c t t c t t c c c a c t g g 4980  
 gtaccctcag cccctatatt ttaattcttg atcatgtaga aattgtttt ggtaaatgtt 5040  
 gatattattg ttattatcat tattaataaa taaagagaaa aggaattttt gtttaaatga 5100  
 gaaatgttta accagattct gttctattt aattgtgact tgcacccccc gttcaaagta 5160  
 tttcccttag gcattgtaat tgtgaacagc tcttacttgc gcaagtgaca gatgcagtgg 5220  
 tctcccttcc ccagttgaag cagtgcatac gcagtagcta ttatttgcgt tatctttatt 5280  
 tctcttcatt gttagaaacc aaagtcttct ctgctggctg gggctgagag agggctctggg 5340  
 ttatctcctt ctgatctca aaacaagaga gagacccctga atacactgac tcttccaccc 5400  
 ttttttttc tggaaagga gagcaagagg tcccgagtcc cctccctagtc tttcatcctg 5460  
 aatttgcaca gagaaagcg ggtgcccggc atggccatcc tgcgttgct ggccggatcc 5520  
 ccatgcacct tgccttcact cactgatact ggcagctcg ctccctggacc caagatccct 5580  
 tgaat tgcagtgc aagagccctt cgtggagct gtcccatgtt tccatggcc 5640  
 ccagtctccc ctccacttgg tgggtcacc aactactcac cagaaggggg cttaccaaga 5700  
 aagccctaaa aagctgtga ctatctgcg cttgtccaa ctcttgc cccaaacctgc 5760  
 cctaccacca ccacgcgctc agcctgatgt gtttacatgg tactgtatgt atgggagagc 5820  
 agactgcacc ctccagcaac aacagatgaa agccagttag cctactaacc gtgcctatctt 5880  
 gcaaactaca cttaaaaaaa aactcattgc tttgtattgt agtaaccaat atgtgcagta 5940  
 tacgttgaat gtatatgaac atactttctt atttctgttc tttgaaaatg tcagaaatat 6000  
 tttttcttt ctcattttat gttgaactaa aaaggattaa aaaaaaaatc tccagactca 6060  
 agttgctaaa aa 6072

<210> 8  
 <211> 1752  
 <212> DNA  
 <213> Homo sapiens

<400> 8  
 gacatgctca gcaacatgcc aggcacagct gcaggctcca gtggcgccgc catctccatc 60  
 agccccagtg ctggtcagat gcagatgcag caccgtacca acctgatggc caccctcagc 120  
 tatgggcacc gtccctgtc caagcagctg agtgcgtaca gtgcagagggc tcacagctt 180  
 aacgtgaatc gtttctcccc tgcttaactac gaccaggcgc atttacaccc ccatctgttt 240

tcggaccagt cccggggttc ccccagcagc tacagccctt caacaggagt ggggttctct 300  
 ccaacccaag ccctgaaaagt ccctccactt gaccaattcc ccacacccc tcccagtgc 360  
 catcagcagc cgccacacca taccacgtcg gcactacagc aggcctgct gtctccacg 420  
 cggccagact atacaagaca ccagcaggta ccccacatcc ttcaaggact gcttctccc 480  
 cggcattcgc tcaccggcca ctccggacatc cggctgcccc caacagagtt tgcacagctc 540  
 ataaaaaggc agcagcaaca acggcagcag cagcagcaac agcagcaaca gcaagaatac 600  
 caggaactgt tcaggacat gaaccaaggg gatgcgggga gtctggctcc cagccttggg 660  
 ggacagagca tgacagagcg ccaggctta tcttatcaa atgctgactc ttatcaccat 720  
 cacaccagcc cccagcatct gctacaaatc agggcacaag aatgtgtctc acaggcttcc 780  
 tcacccaccc cgccccacgg gtagtgcac cagccgcac ttagtgcattc agagagcatg 840  
 gaggaggact gctcgtgtga gggggccaag gatggcttcc aagacagtaa gagttcaagt 900  
 acattgacca aagggttgcga tgacagccct ctgctttga gtaccgggtgg acctggggac 960  
 cctgaatctt tgcttaggaac tgtgagtcat gccaagaat tgggataca tccctatggt 1020  
 catcagccaa ctgctgcatt cagtaaaaat aaggtgcccgcagagagcc tgcataagg 1080  
 aactgcattt atagaagttc tccaggacaa gcaatggagc tgccggatca caatgggtc 1140  
 gggtaaaaaa caccggccctc cgtccatgag caccacaggc cccggggccct ccagagacac 1200  
 cacacgatcc agaacagcga cgtatgttat gtacagctgg ataaacttgcg aggaatgagt 1260  
 ctcgtggctg ggaaaggact tagctctgcc cggatgtcggtatcagttct cagtcagtt 1320  
 tcgctcatgg gcaagccagca gtttcaggat gggaaaaatg aggaatgtgg ggcaagccctg 1380  
 ggaggtcatg agcaccaga cctgagtgtat ggcagccagc atttaaactc ctcttgcata 1440  
 ccatctacgt gtattacaga cattctgctc agtacaagc accccgaagt ctcccttcagc 1500  
 atggagcagg caggcgtgtaa acaagaaaaca gagagtttg tgtacagctt ggaaatgaaa 1560  
 aggttatttgc taaaccacaa gtatctagca gcgttgcctt aaattgcctt tttttttttc 1620  
 tccacccaaa atatcacacgc tgcttcctc acatgggtt catccgtgtg ctgttcttt 1680  
 gggttctgag agggtttgc catgtttgtt tgtatgacca agtcaccaag gaaataaaca 1740  
 ggaaggaaat cc 1752

<210> 9  
 <211> 4460  
 <212> DNA  
 <213> Homo sapiens

<400> 9  
 ggcacgcccc gggcgcccc cgggtgcgtc ctggcgcccc gattggcgga gcccggaggt 60  
 ggcagcgcccc atggggcgccg gctgtctccca gggaaacgcg acgtctccg taggcgcagg 120

gctggcaagc agtcgggacg ggagcgcggg cgtccgcggg ggctgcagtc ccgtcggtct 180  
ccctgctgtc cggcgcgagc tcttcgagtc ttgcttgggtg cggctcgcg acaggagcgc 240  
tgggagccgg ggctaggggg atcccgagc tccgtggggc ggccgggtgcg ggccgggctg 300  
ccggggccgg gactggggga gccgggcccgg cggggccct gctgcctccg cccgcgcggg 360  
ggtccccagc cgcccccgct gccgtgtccc ctgcggccgg ccagccgcgt cccccagccc 420  
cgccctcccg cggacccatg cccgcccgtt tcggctacta cgagatcgac cgcaccatcg 480  
gcaaggcgaat cttcgccgtt gtcaagcggg ccacgcaccc cgtcaccaag gccaagggtt 540  
ctatcaagat catagataag acccagctgg atgaagaaaa cttgaagaag attttccggg 600  
aagttcaaat tatgaagatg ctttgccacc cccatatcat caggctctac caggttatgg 660  
agacagaacg gatgatttat ctggtgacag aatatgctag tggagggaa atatttgacc 720  
acctggtggc ccatggtaga atggcagaaa aggaggcacg tcggaagttc aaacagatcg 780  
tcacagctgt ctattttgcactgtcgaa acattgttca tcgtgattta aaagctgaaa 840  
atttacttct ggatgccaat ctgaatatca aaatagcaga ttttggttca agtaacctct 900  
tcactccctgg gcagctgctg aagacctggt gtggcagccc tccctatgtc gcacctgaac 960  
tctttgaagg aaaagaatat gatggccca aagtggacat ctggagccctt ggagttgtcc 1020  
tctacgtgct tgtgtcggt gcccgtccat ttgatggaag cacactgcag aatctgcggg 1080  
cccgctgtct gagtggaaag ttccgcattcc cattttttat gtccacagaa tgtgagcatt 1140  
tgatccgcca tatgttgggtt ttagatccca ataagcgcctt ctccatggag cagatctgca 1200  
agcacaagtg gatgaagcta ggggaccccg atcccaactt tgacagggtt atagctgaat 1260  
gccaacaact aaaggaagaa agacagggtgg accccctgaa tgaggatgtc ctctggcca 1320  
tggaggacat gggactggac aaagaacaga cactgcagtc attaagatca gatgcctatg 1380  
atcactatag tgcaatctac agcctgctgt gtgatcgaca taagagacat aaaacccctgc 1440  
gtctcgagc acttccttagc atgcccccgag ccctggccctt tcaagcacca gtcaatatcc 1500  
aggcggagca ggcaggtact gctatgaaca tcagcgttcc ccaggtgcag ctgatcaacc 1560  
cagagaacca aattgtggag ccggatggaa cactgaattt ggacagtgtt gagggtgaag 1620  
agccttcccc tgaagcattt gtcgcgttatt tgtcaatggag gaggcacaca gtgggtgtgg 1680  
ctgacccacg cacggaaatgtt atgaaagatc tgcagaagctt cctacctggc tttcctggag 1740  
tcaaccccca ggctccatttc ctgcagggtgg cccctaatgtt gaacttcatg cacaacccgtt 1800  
tgcctatgca aaacttgcaa ccaaccgggc aacttggatcaaggagcag tctctccctac 1860  
agccgcccac gctacagctg ttgaatggaa tggggccctt tggccggagg gcatcagatg 1920  
gaggagccaa catccaaacttg catgccccagc agctgctgaa ggcggccacgg ggaccctctc 1980

cgcttgcac catgacacca gcagtgcag cagttacccc tgtggacgag gagagctcg	2040
acggggagcc agaccaggaa gctgtgcaga gctctaccta caaggactcc aacactctgc	2100
acctccctac ggagcggttc tcccgtgc gccggttctc agatggggct gcgagcatcc	2160
aggcctcaa agtcacactg gaaaaaatgg gcaacaacag cagcatcaaa cagctgcagc	2220
aggagtgtga gcagctgcag aagatgtacg gggggcagat tgatgaaaga accctggaga	2280
agacccagca gcagcatatg ttataccagc aggagcagca ccatcaaatt ctccagcaac	2340
aaattcaaga ctctatctgt cctcctcagc catctccacc tcttcaggct gcatgtgaaa	2400
atcagccagc cctccttacc catcagctcc agaggtaag gattcagct tcaagccac	2460
cccccaacca ccccaacaac catctttca ggcagcccag taatagtcct ccccccattga	2520
gcagtgccat gatccagcct cacggggctg catcttcttc ccagttcaa ggcttacatt	2580
cccgcagtgc aatcttcag cagcaacactg agaactgttc ctctcctccc aacgtggcac	2640
taacctgctt gggtatgcag cagcctgctc agtcacagca ggtcaccatc caagtccaaag	2700
agcctgtga catgctcagc aacatgcagc gcacagctgc aggctccagt gggcgccgca	2760
tctccatcag ccccaagtgc ggtcagatgc agatgcagca ccgtaccaac ctgatggcca	2820
ccctcagcta tgggcaccgt cccttgcctca agcagctgag tgctgacagt gcagaggctc	2880
acagcttcaa cgtaaatcgg ttctccctg ctaactacga ccaggcgcatttacaccccc	2940
atctgttttc ggaccagtcg cggggttccc ccagcagcta cagcccttca acaggagtgg	3000
ggttctctcc aacccaagcc ctgaaagtcc ctccacttga ccaattcccc accttccctc	3060
ccagtgcaca tcagcagccg ccacactata ccacgtcggc actacagcag gcccgtgt	3120
ctccccacgccc gccagactat acaagacacc agcaggtacc ccacatcctt caaggactgc	3180
tttctcccccg gcattcgttc accggccact cggacatecg gctgccccca acagagtttgc	3240
cacagctcat taaaaggcag cagcaacaac ggcagcagca gcagcaacag cagcaacagc	3300
aagaatacca ggaactgttc aggcacatga accaaggggta tgccccggagt ctggctccaa	3360
gccttgggggg acagagcatg acagagcgcc aggctttatc ttatcaaaat gctgacttcc	3420
atcaccatca caccagcccc cagcatctgc tacaaatcag ggcacaagaa tgtgtctcac	3480
aggcttcctc acccaccggc ccccacgggt atgctcacca gccggcactg atgcattcag	3540
agagcatgga ggaggactgc tcgtgtgagg gggccaaaggta tggcttccaa gacagtaaga	3600
gttcaagtac attgaccaaa ggttgcctg acagccctt gctcttgagt accgggtggac	3660
ctggggaccc tgaatcttg ctaggaactg tgagtcatgc ccaagaattt gggatacatc	3720
cctatggtca tcagccaaact gctgcattca gtaaaaataa ggtgcccagc agagagcctg	3780
tcatagggaa ctgcattggat agaagttctc caggacaagc agtggagctg ccggatcaca	3840

atgggctcggtacccagca cgcccccctcggtccatgagca ccacaggccc cggggccctcc 3900  
 agagacacca cacgatccag aacagcgacg atgcttatgt acagctggat aacttgccag 3960  
 gaatgagtct cgtggctggg aaagcactta gctctgccccg gatgtcgatgcagttctca 4020  
 gtcagtcttc gtcatgggc agccagcagt ttcaaggatgg ggaaaatgag gaatgtgggg 4080  
 caaggctggg aggtcatgag cacccagacc tgagtgatgg cagccagcat taaaactcct 4140  
 ctgctatcc atctacgtgtt attacagaca ttctgctcag ctacaaggcac cccgaagtct 4200  
 cttcagcat ggaggcaggca ggcgtgtaac aagaaacaga gagtttgcg tacagctgg 4260  
 gaatgaaaag gttgattgtaaacccacagt atctagcagc gttgtgccaa attgccccttg 4320  
 ttttctctc caccctaaat atcacagctg ctttcctcac atttggttca tccgtgtct 4380  
 gttttttgg gttctgagag gttttgcca tgtttgccttg tatgaccaag tcaccaagga 4440  
 aataaacagg aaggaaatcc 4460

<210> 10  
 <211> 4919  
 <212> DNA  
 <213> Homo sapiens

<400> 10  
 gagcaagcgg agcggccgtc gcccaagccaa gcccgcgtc ccaaccctcc cgcccgcccc 60  
 cgctcctgtc cgccgtgtct agcagcgggg cccagcatgg tcatggcgga tggcccgagg 120  
 cacttgcagc gccccccgtt ccgggtgggg ttctacgaca tcgagggcac gctggcaag 180  
 ggcaacttcg ctgtggtaa gctggggcgg cacccgatca ccaagacgga ggtggcaata 240  
 aaaataatcg ataagtctca gctggatgca gtgaaccttg agaaaatcta ccgagaagta 300  
 caaataatga aaatgttaga ccaccctcac ataatcaaac tttatcaggt aatggagacc 360  
 aaaagtatgt tgcgtttgtt gacagaatat gccaaaaatg gagaatttt tgactatctt 420  
 gtaatcatg gcccgttaaa tgagtctgaa gccaggcgaa aattctggca aatcctgtct 480  
 gctgttgcattt attgtcatgg tcgaaagatt gtgcaccgtc acctcaaagc tgaaaatctc 540  
 ctgctggata acaacatgaa tatcaaaata gcagattcg gttttggaaa tttttttaaa 600  
 agtggtaac tgctggcaac atgggtgtggc agccccctt atgcagcccc agaagtcttt 660  
 gaaggccagc agtataagg accacagctg gacatctgga gatggggatg tgggtttat 720  
 gtccttgtct gtggagctct gcccgttgc gacccgtc ttccatgtt gggcagagg 780  
 gttctggaaag gaagattccg gattccgtat ttcatgtcag aagattgcga gcacccatc 840  
 cgaaggatgt tggtcctaga cccatccaaa cggctaaacca tagccaaat caaggagcat 900  
 aatggatgc tcatagaagt tccctgtccag agacctgttc tctatccaca agagcaagaa 960

aatgagccat	ccatcgaaaa	gtttaatgag	caggttctgc	gactgatgca	cagccttgg	1020
atagatcagc	agaaaaccat	tgagtctttg	cagaacaaga	gctataacca	cttgcgtcc	1080
atttatttct	tgttggtgg	gcccctgaaa	tcacatogga	gcagttccc	agtggaggcag	1140
agacttgcgt	gcccggcagcg	tcggcctagc	accattgctg	agcaaacagt	tgccaaggca	1200
cagactgtgg	ggctccca	gaccatgcat	tcaccgaaca	tgaggctgct	gcgatctgcc	1260
ctccctcccc	aggcatccaa	cgtggaggcc	ttttcatttc	cagcatctgg	ctgtcaggcg	1320
gaagctgcat	tcatggaaaga	agagtgtgtg	gacactccaa	aggtaatgg	ctgtctgctt	1380
gaccctgtgc	ctccctgtcct	ggtgccggaa	ggatgcccagt	cactgcccag	caacatgatg	1440
gagacctcca	ttgacgaagg	gctggagaca	gaaggagagg	ccgaggaaga	ccccgctcat	1500
gcctttgagg	catttcagtc	cacacgcagc	gggcagagac	ggcacactct	gtcagaagtg	1560
accaatcaac	tggtcgtgat	gcctggggca	ggggaaaattt	tctccatgaa	tgacagcccc	1620
tcccttgaca	gtgtggactc	tgagtatgat	atggggtctg	ttcagaggga	cctgaacttt	1680
ctggaagaca	acccttccct	taaggacatc	atgttagcca	atcagccttc	accccgcatt	1740
acatctccct	tcataaggct	gagacctacc	aacccagcca	tgcaggctct	gagctccca	1800
aaacgagagg	tccacaacag	gtctccagtg	agttcagag	agggccgcag	agcatcagat	1860
accccttca	cccaggaat	tgtagcattt	agacaacatc	ttcagaatct	ggctagaacc	1920
aaaggaattc	tagagtgaa	caaagtgcag	ttgttgtatg	aacaaatagg	accggaggca	1980
gaccctaacc	tggcgccggc	ggctcctcag	ctccaggacc	ttgctagcag	ctgccctcag	2040
gaagaagttt	ctcagcagca	ggaaagcgtc	tccactctcc	ctgccagcgt	gcattccccag	2100
ctgtccccac	ggcagagcct	ggagacccag	tacctgcagc	acagactcca	gaagcccagc	2160
cttctgtcaa	aggcccagaa	cacctgtcag	ctttattgca	aagaaccacc	gcggagccct	2220
gagcagcagc	tgcaggaaca	taggctccag	cagaagcgac	tctttcttca	gaagcagtt	2280
caactgcagg	cctattttaa	tcagatgcag	atagcagaga	gctccctaccc	acagccaagt	2340
cagcagctgc	cccttccccg	ccaggagact	ccacccgcctt	ctcagcaggc	cccaccgttc	2400
agcctgaccc	agccctgag	ccccgtcctg	gagccttcct	ccgagcagat	gcaatacagc	2460
cctttctca	gccagtacca	agagatgcag	tttcagcccc	tgccctccac	ttccggtccc	2520
cgggctgctc	ctcctctgcc	cacgcagcta	cagcagcagc	agccgccacc	gccaccaccc	2580
cctccaccac	cacgcacagcc	aggagctgcc	ccagccccct	tacagttctc	ctatcagact	2640
tgtgagctgc	caagcgctgc	ttccctgtcg	ccagactatc	ccactccctg	tcagtatct	2700
gtggatggag	cccagcagag	cgacctaacg	ggcccgact	gtcccagaag	cccaggactg	2760
caagaggccc	cctccagcta	cgacccacta	gcctctctg	agctacctgg	actctttgat	2820

tgtgaaatgc tagacgctgt ggatccacaa cacaacgggt atgtcctgggt gaattagtct	2880
cagcacagga attgaggtgg gtcaggtgaa ggaagagtgt atgttccctat ttttattcca	2940
gcctttaaa tttaaagctt attttcttgc cctctcccta acggggagaa atcgagccac	3000
ccaactggaa tcagagggtc tggctgggt ggatgttgct tcctcctgggt tctgccccac	3060
cacaaagttt tctgtggcaa gtgctggAAC atagtttag gctgaggctc ctgccttcg	3120
gtcgagtggaa gcaagctctc gagggcagca ctgacaaatg tggcttcaag aagacattca	3180
gacccaggtt ttatgcagga ttacatccgt ttattatcaa gggcaacctt ggtgaaagca	3240
gaaagggtgt gtgctattgc atatatatgg gggaaaaggc aatatatttt tcactgaagc	3300
ttagcaacca catattgcta caaggcaaata caagaagaca tcaggaaatc agatgcacag	3360
gaaataaagg aaagctgtgc ttgtcattt aatcctaagt tcttagctgc tgatgcaagt	3420
tgtcccccaa ggcacatcaca aagcagtggg gcatgagctg tggcagggg gccactaaat	3480
aacagctggt actgacccca gaaaccgcct tcataccat tcgaaagcag gtgacacacc	3540
ccttcagaag gtgcctggg ttgcgcagtg tcagaatata ctcaggactc cagaggtgtc	3600
acacgtggaa ctgacaggag acccgccacc gtggaggcag gggcaagaa actcaagaac	3660
gcatcaagag caccaggccct gggccaggga agacaggctc ttctgcagt ttctcggttga	3720
cactgctggc ttgcggcag tcggtcctca gggtaacctgt tgcctttttt ccgtatgtat	3780
aactactttt accttacact atatgttgct agtagtttata tgagctttgt atatttgac	3840
agtttcatat agggcttaga gattttaagg acatgataaa tgaacttttc tgccttcatgt	3900
gaagtggtag tgcgggtgcct ttccccaga tcatacctta attttttttt ttctgttagaa	3960
accaacagtt tccattttatc tcaatgctaa atccaaagtc acttcagagt ttgttttcca	4020
ccatgtggga atcagcattc ttaatttcgt taaagtttg acttgtatg aaatgttcaa	4080
gtattacagc aatattcaaa gaaagaacca cagatgtgtt aaccatttaa gcagatcatc	4140
tgcacaaat tatattacta ataaaactta accaacactt acaattcagt catcaaagta	4200
agtaaaaattt agatgtaca gctagctaac tgccttccata gaaatgtatgataatggcc	4260
atttggacag ttaacatcca ggtgttacaa agtcagtgtt aattctaaag atgatcattt	4320
ctgccttta gaatggcttg tcccatcagc agatgaatgt gtttgcacca aagcatcttcc	4380
cttaaaggcac aaagagaggg actaactgat gctgcacatcata gaaaacaccc ttaagttggc	4440
tttccctttt gtagtttagcg ttccaggcagg tgacgtgtgg aaagtctagg gggttccatt	4500
ctggccatgc gagcccaagct cctaccaacg tcggtaactt gagcagtccc tggcgtggc	4560
cagagactgc ctggcgtccca ggcgtcacca tgggtggcag gatgtttcgc agaggcactg	4620
tgctcacggt tggacttgggt gtcagtggga aagggcagtg tggggactgt catttttgtg	4680

attaataaac acacagtcaa aatccaggaa gaatgaatta agttttctt gggagttgtt 4740  
 tattcctgct cgtgcttaag attgatgatt tcgtgaaata aagaacatca tttcattaa 4800  
 gagatcattt cattaagatc tctaattgtt tttgagtctt tacaaaatag ccagttataa 4860  
 aatggggctt gatttggtaa gactgaagga agacgttttc ccaaaaatata ctacagaag 4919

<210> 11  
 <211> 4919  
 <212> DNA  
 <213> Homo sapiens

<400> 11  
 gagcaagcgg agcggccgtc gcccaagcca agccgcgtg ccaaccctcc cgcccgcccc 60  
 cgctcctgtc cgccgtgtct agcagcgggg cccagcatgg tcatggcggg tggcccgagg 120  
 cacttgcagc gcgggccccgtt cgggtgggg ttctacgaca tcgagggcac gctggcaag 180  
 gccaacttcg ctgtggtaa gctggggcgg caccggatca ccaagacgga ggtggcaata 240  
 aaaataatcg ataagtctca gctggatgca gtgaaccctt agaaaatcta ccgagaagta 300  
 ccaaataatga aaatgttaga ccaccctcac ataatcaaac tttatcaggtaatggagacc 360  
 aaaagtatgt tgtaccttgc gacagaatat gccaaaaatg gagaatttt tgactatctt 420  
 gctaattcatg gccggtaaa tgagtctgaa gccaggcggaa aattctggca aatcctgtat 480  
 gctgttgatt attgtcatgg tcggaagatt gtgcaccgtg acctcaaagc tgaaaatctc 540  
 ctgctggata acaacatgaa tatcaaaata gcagatttcg gttttggaaa tttctttaaa 600  
 agtggtaac tgctggcaac atgggtgtggc agccccccctt atgcagcccc agaagtcttt 660  
 gaagggcagc agtatgaagg accacagctg gacatctgga gtatggagt tgttctttat 720  
 gtccttgcgtct gtggagctct gcccttgat ggacggactc ttccaatttt gaggcagagg 780  
 gtctggaaag gaagatccg gattccgtat ttcatgtcag aagattgcga gcaccttatac 840  
 cgaaggatgt tggtccatca cccatccaaa cggctaaacca tagccaaat caaggagcat 900  
 aaatggatgc tcatagaagt tcctgtccag agacctgttc tctatccaca agagcaagaa 960  
 aatgagccat ccattggggaa gttaatgag caggttctgc gactgtatgca cagccttggaa 1020  
 atagatcagc agaaaaccat tgagtctttc cagaacaaga gctataacca ctttgcgtcc 1080  
 atttatttct tggtggtaa ggcctgaaa tcacatcgaa gcagtttccc agtggagcag 1140  
 agacttgcgtg gcccggcagc tcggcctagc accattgtc agcaaaacagt tgccaaaggca 1200  
 cagactgtgg ggctcccaactt gaccatgcat tcaccgaaca tgaggctgtc gcgatctgcc 1260  
 ctccctcccccc aggcattccaa cgtggaggcc ttttcatttc cagcatctgg ctgtcaggcg 1320  
 gaagctgcattt tcatggaaaga agagtgtgtg gacactccaa aggtcaatgg ctgtctgttt 1380  
 gaccctgtgc ctccctgtccct ggtgcggaaag ggatgccagt cactgccccag caacatgtat 1440

gagacctcca ttgacgaagg gctggagaca gaaggagagg ccgaggaaga ccccgctcat 1500  
 gccttgagg catttcagtc cacacgcagc gggcagagac ggcacactct gtcagaagtg 1560  
 accaatcaac tggtcgtat gcctggggca gggaaaattt tctccatgaa tgacagcccc 1620  
 tcccttgaca gtgtggactc tgagtatgat atggggctcg tttaggggaa cctgaacttt 1680  
 ctggaagaca acccttccct taaggacatc atgttagcca atcagccttc accccgcatg 1740  
 acatctccct tcataagcct gagacctacc aacccagcca tgcaggctct gagctcccg 1800  
 aaacgagagg tccacaacag gtctccagtg agcttcagag agggccgcag agcatcagat 1860  
 acctccctca cccagggaaat tgtagcattt agacaacatc tttagaatct ggctagaacc 1920  
 aaaggaattt tagagttgaa caaaatgcag ttgtttagt aacaaatagg accggaggca 1980  
 gaccctaacc tggcgccggc ggctcctcag ctccaggacc ttgcttagcag ctgcccctcag 2040  
 gaagaagttt ctcagcagca gggaaagcgctc tccactctcc ctgcccagcgt gcatccccag 2100  
 ctgtccccac ggcagagcct ggagacccag tacctgcagc acagactcca gaagcccagc 2160  
 cttctgtcaa aggccccagaa cacctgtcag ctttattgca aagaaccacc gcccggcctt 2220  
 gaggcagcagc tgcaggaaca taggctccag cagaagcgac tcttttttca gaagcagtct 2280  
 caactgcagg cctattttaa tcagatgcag atagcagaga gctcttaccc acagccaaatg 2340  
 cagcagctgc ccctcccccg ccaggagact ccaccgcctt ctcagcaggc cccaccgttc 2400  
 agcctgaccc agccctgag ccccgctctg gaggcttccct ccgaggcagat gcaatacagc 2460  
 cttttcctca gccagtacca agagatgcag cttcagccccc tgccctccac ttccggtccc 2520  
 cgggctgctc ctctctgccc cacgcagcta cagcagcagc agccgcacc gcccaccacc 2580  
 cttccaccac cacgcacagcc agggactgccc ccagccccc tacagttctc ctatcagact 2640  
 tggtagctgc caagcgctgc ttccctgctg ccagactata ccactccctg tcagttatct 2700  
 gtggatggag ccagcagag cgacctaactg gggccagact gtcggcagaag cccaggactg 2760  
 caagaggccc cttccagacta cgaccacta gcccctctg agtacactgg actctttgt 2820  
 tggtagatgc tagacgtgtt ggtttccacaa cacaacgggt atgttctggt gaatttagtct 2880  
 cagcacagga attgggtgg gtcaggtgaa ggaagagtgt atgttcttat ttttatttcca 2940  
 gcctttaaa tttaaagctt attttttgc ctttccttca acggggagaa atcgaggccac 3000  
 ccaactggaa tcagagggtc tggctgggtt ggtttttgtt ttttttttttccctccac 3060  
 cacaaatgtt tctgtggcaa gtgtggaaat atagttgtat gctggggctc ctgcccctc 3120  
 gtcgagtgaa gcaagctctc gagggcagca ctgacaaatg tggcttcaag aagacattca 3180  
 gacccagggtc ttatgcagga ttacatccgt ttgttatcaa gggcaacctt ggtgaaagca 3240  
 gaaagggtgt gtgtatfjc atatatatgg gggaaaaggc aatataatgtt tcactgaagc 3300

tgtagcaacca catattgcta caaggcaaat caagaagaca tcagggaaatc agatgcacag 3360  
gaaataaaagg aaagctgtgc tttgtcattg aatcctaagt tcttagctgc tgatgcaagt 3420  
tgtcccccaa ggc当地caca aagcagtgccc gcatgagctg tgtttcaggg gccactaaat 3480  
aacagctggc actgacccca gaaaccgcct tcatactccat tcggaagcag gtgacacacc 3540  
ccttcagaag gtgcccctggg ttgccgagtg tcagaatata ctcaggactc cagaggtgtc 3600  
acacgtggaa ctgacaggag acccgccacc gtggaggcag gggcaagaa actcaagaac 3660  
gcatcaagag caccagccct gggccagggg agacaggctc ttccctgcagt ttctcgtgga 3720  
caactgctggc ttgcgggcag tcgggtctcca gggtaacctgt tgcgtctttt ccgatgtaat 3780  
aactactttg accttacact atatgttgct agtagtttat tgagctttgt atatttggac 3840  
agtttcatat agggcttaga gatTTAAGG acatgataaa tgaactttc tgccttcatgt 3900  
gaagtggtag tgcgggtgcct ttcccccaaga tcatacttta attcttctt ttctgttagaa 3960  
accaacagtt tccattttag tcaatgctaa atccaaagtc acttcagagt ttgtttcca 4020  
ccatgtggga atcagcattc ttaatttcgt taaagtttg acttgtaatg aaatgttcaa 4080  
gtattacagc aatattcaaa gaaagaacca cagatgtgtt aaccatttaa gcagatcatc 4140  
tgccaaacat tatattacta ataaaactta accaacactt acaattcagt catcaaagta 4200  
agtaaaaatt agatgctaca gctagctaac tgcgtcccta gaaatgtatga ataatttgc 4260  
atttggacag ttaacatcca ggtgttacaa agtcagtgtt aattctaaag atgatcattt 4320  
ctgcccatttta gaatggcttg tcccatcagc agatgaatgt gttaaagcaca aagcatcttc 4380  
cttaaagcac aaagagaggg actaactgat gctgcatttta gaaaacacct ttaagttgcc 4440  
tttcctctttt gtagtttagcg ttccaggcagg tgacgtgtgg aaagtctagg gggttccatt 4500  
ctggccatgc gagcccatgc cctaccaacg tcggtaactt gagcagtccc tgcgtccgc 4560  
cagagactgc ctggtcgcca gcgctcacca tgggtgccag gatgcttcgc agaggcactg 4620  
tgctcacgggt tggacttgggt gtcagtggga aagggcagtg tggggactgt cattttgtg 4680  
attnaataac acacagtggaa aatccaggaa gaatgaatttta agcttcttctt gggagttgtt 4740  
tattcctgct cgtgcttaag attgatgatt tcgtgaaata aagaacatca ttccatttaa 4800  
gagatcattt cattaagatc tctaattctgt tttgagtctt tacaaaatag ccaggattaa 4860  
aatggggctt gatttggtaa gactgaagga agacgtttc cccaaatata ctacagaag 4919

<210> 12  
<211> 8991  
<212> DNA  
<213> Homo sapiens  
  
<400> 12

gttggcctac tggagccgcg ctgccaaccc tcccgcgcg cccgcgtct gtccgcgtg 60  
 tcttagcagcg gggcccgacca tggtcatggc ggtatggcccg aggcaacttgc agcgcggcc 120  
 ggtccgggtg gggttctacg acatcgaggg cacgctggc aagggaact tcgctgtgg 180  
 gaagctgggg cgccacccga tcaccaagac ggagggtggca ataaaaataa tcgataagtc 240  
 tcagctggat gcagtgaacc ttgagaaaaat ctaccgagaa gtacaaataa tgaaaatgtt 300  
 agaccaccct cacataatca aactttatca ggtaatggag accaaaaagta tgttgtacct 360  
 tggacagaa tatgccaaaa atggagaaat ttttgaactat cttgctaatc atggccggtt 420  
 aaatgagtct gaagccaggc gaaaattctg gcaaaatcctg tctgctgttg attattgtca 480  
 tggtcggaag attgtgcacc gtgacctcaa agctgaaaaat ctccgtctgg ataacaacat 540  
 gaatatcaaa atagcagatt tcggtttgg aaatttctt aaaagtggtg aactgctggc 600  
 aacatggtgt ggcagcccc cttatgcagc cccagaagtc ttgaagggc agcagttatga 660  
 aggaccacag ctggacatct ggagtatggg agttgttctt tatgtccttg tctgtggagc 720  
 tctgccctt gatggaccga ctcttccaat tttgaggcag agggttctgg aaggaagatt 780  
 ccggattccg tatttcatgt cagaagattg cgacacccctt atccgaaggaa tgttggcct 840  
 agacccatcc aaacggctaa ccatagcccc aatcaaggag cataaatggaa tgctcataga 900  
 agttcctgtc cagagacctg ttctctatcc acaagagcaa gaaaatgagc catccatccg 960  
 ggagtttaat gagcaggttc tgcgactgtat gcacacccctt ggaatagatc agcagaaaaac 1020  
 cattgagtct ttgcagaaca agagctataa ccactttgtc gccattttt tcttgggt 1080  
 ggagcgcctg aaatcacatc ggagcagttt cccagtgag cagagacttgc atggccgcca 1140  
 gcgtcggcct agcaccattt ctgagcaaac agttgcacccg gcacagactg tggggctccc 1200  
 agtgaccatg cattcaccga acatgaggct gctgcgatct gccctccctcc cccaggcatc 1260  
 caacgtggag gcctttcat ttccagcatc tggctgtcag gccaaggctg cattcatgg 1320  
 agaagagtgt gtggacactc caaaggtaa tggctgtctg cttgaccctg tgccctctgt 1380  
 cctggcgcgg aaggatgcc agtcactgcc cagcaacatg atggagacccctt ccattgacga 1440  
 agggctggag acagaaggag aggccgagga agaccccgct catgcctttg aggcatttca 1500  
 gtcccacacgc agcgggcaga gacggcacac tctgtcagaa gtgaccaatc aactggcgt 1560  
 gatgcctggg gcagggaaaa ttttctccat gaatgacagc ccctcccttg acagtgtgg 1620  
 ctctgagtat gatatgggt ctgttcagag ggacctgaac tttctggaaag acaacccttc 1680  
 ccttaaggac atcatgttag ccaatcagcc ttcacccgc atgacatctc ctttcataag 1740  
 cctgagacccat accaaccctcg ccatgcagcc tctgagctcc cagaaacgag aggtccacaa 1800  
 caggctccat gtgagcttca gagagggccg cagagcatca gatacctccc tcaccccg 1860

aattgtagca	tttagacaac	atttcagaa	tctggctaga	accaaaggaa	ttctagagtt	1920
gaacaaagtg	cagttgtgt	atgaacaaat	aggaccggag	gcagacccta	acctggcgcc	1980
ggcggctcct	cagctccagg	accttgctag	cagctgccct	caggaagaag	tttctcagca	2040
gcagggaaagc	gtctccactc	tccctgccag	cgtgcattcc	cagctgtccc	cacggcagag	2100
cctggagacc	cagtacactgc	agcacagact	ccagaagccc	agcattctgt	caaaggccca	2160
gaacacctgt	cagcttattt	gcaaagaacc	accgcggagc	ctttagcagc	agctgcagga	2220
acataggctc	cagcagaagc	gactttttct	tcagaagcag	tctcaactgc	aggcctattt	2280
taatcagatg	cagatagcag	agagctcta	cccacagcca	agtcagcagc	tgccccctcc	2340
ccgccaggag	actccacccgc	cttctcagca	ggccccaccg	ttcagcctga	cccagccct	2400
gagccccgtc	ctggagcctt	cctccgagca	gatgcaatac	agccctttcc	tcagccagta	2460
ccaaagagatg	cagcttcagc	ccctgccctc	cacttccggt	ccccgggctg	ctccctctct	2520
gcccacgcag	ctacagcagc	agcagccgccc	accgcacca	ccccctccac	caccacgaca	2580
gccaggagct	gccccagccc	cttacagtt	ctcctatcag	acttgtgagc	tgccaagcgc	2640
tgtttcccc	gcccagact	atcccactcc	ctgtcagttat	cctgtggatg	gagcccagca	2700
gagcgcaccta	acggggccag	actgtcccag	aagcccagga	ctgcaagagg	ccccctccag	2760
ctacgaccca	ctagccctct	ctgagctacc	tggactcttt	gattgtgaaa	tgctagacgc	2820
tgtggatcca	caacacaacg	ggtatgtcct	ggtgaattag	tctcagcaca	ggaattgagg	2880
tgggtcaggt	gaaggaagag	tgtatgttcc	tatttttattt	ccagcctttt	aaatttaaag	2940
cttattttct	tgccctctcc	ctaacgggaa	gaaatcgagc	cacccaactg	gaatcagagg	3000
gtctggctgg	ggtggatgtt	gcttcctcct	ggttctgcc	caccacaaag	ttttctgtgg	3060
caagtgcgtgg	aacatagttg	taggctgagg	ctctgcctt	tcggtcgagt	ggagcaagct	3120
ctcgagggca	gcactgacaa	atgtgttcc	aagaagacat	tcagacccag	gtcttatgca	3180
ggattacatc	cgtttattat	caagggcaac	cttggtgaaa	gcagaaaggg	tgtgtgctat	3240
tgcatatata	tggggaaaaa	ggcaatatata	tttcactga	agctgagcaa	ccacatattg	3300
ctacaaggca	aatcaagaag	acatcaggaa	atcagatgca	caggaataa	aggaaagctg	3360
tgctttgtca	ttgaatccta	agttcttagc	tgctgatgca	agttgtcccc	caaggccatc	3420
acaaaggcagt	ggggcatgag	ctgtgtttca	ggggccacta	aataacagct	ggtactgacc	3480
ccagaaaccg	cttcatctc	cattcggaaag	caggtgacac	acccttcag	aaggtgcct	3540
gggttgcga	gtgtcagaat	atactcagga	ctccagaggt	gtcacacgtg	gaactgacag	3600
gagacccgccc	accgtggagg	cagggggcaa	gaaactcaag	aacgcataa	gagcaccagc	3660
cctggccag	ggaagacagg	ctcttcctgc	agtttctcg	ggacactgct	ggcttgccgg	3720

cagtcggctc	ccagggtacc	tgttgtctct	tttccgatgt	aataactact	ttgacccat	3780		
actatatgtt	gctagtagtt	tattgagett	tgtatattt	gacagttca	tatagggtt	3840		
agagatttta	aggacatgat	aaatgaactt	ttctgtccca	tgtgaagtgg	tagtgcggtg	3900		
ccttcccccc	agatcatgct	ttaattcttt	cttttctgta	gaaaccaaca	gtttccat	3960		
atgtcaatgc	taaatccaaa	gtcacttcag	agtttgtttt	ccaccatgtg	ggaatcagca	4020		
ttcttaattt	cgttaaagtt	ttgacttgta	atgaaatgtt	caagtattac	agcaatattc	4080		
aaagaaaagaa	ccacagatgt	gttaaccatt	taagcagatc	atctgcca	cattatatta	4140		
ctaataaaac	ttaaccaaca	ctacaat	agtcatca	gtaa	gtaaaaaattagatgt	4200		
acagctagct	aactgtatcc	ctagaaatga	tgaataattt	gcoatttgg	cagttAACAT	4260		
ccaggtgtta	caaagtccgt	gttaattcta	aagatgatca	tttctgc	tttagatggc	4320		
ttgtcccatc	agcagatgaa	tgtgttaagc	acaaagc	ttcc	ttttaag cacaaagaga	4380		
gggactaact	gatgctgc	ctagaaaaca	ccttaagtt	gccttc	cttc tttgttagtta	4440		
gogttcaggc	aggtgacgtg	tggaaagtct	aggggg	ttcc	tttctggcca tgcgagcc	4500		
gctcctacca	acgtcgtaa	cttggc	ccctgttg	ggcc	agagac tgcctggc	4560		
ccagcgctca	ccatgggtgc	caggatgctt	cgc	agg	gac	ctgtgctcac ggttggactt	4620	
gggtgc	ggaaagg	ggac	tgtgtgg	tgt	cattttt	gtgat	ttttaat aacacacagt	4680
gaaaatccag	gaagaatgaa	ttaagcttct	tctgg	gatgtt	gttattc	cttgcgtg	4740	
aagattgatg	at	ttcgtgaa	at	aaagaaca	tcattt	catt	taagagatca tttcattaag	4800
atctctaatac	tgttt	tttgcgt	tttac	aaaa	taa	atgg	tttgcattgt	4860
ttagactgaa	ggaagacg	ttcc	ccaaat	at	actac	aga	gtgctacaa tatttgc	4920
attaaaatgc	ctgc	aggattt	aaaat	gggg	ccact	cattt	cagaactgca ggaatgg	4980
agttacagat	cgacataa	ac	cc	aaat	caaca	atg	gtcgt tagcc	5040
gac	ctatggc	agg	ac	gg	ccatg	gta	ggactgc	5100
ggaagg	ttaa	ggac	cc	ccag	ag	agg	act	5160
atccgtcaca	cacggc	cagcg	gcgt	ggac	ac	cg	ccctc	5220
tgggac	ctgt	gtt	gtt	gta	agg	ctt	gtc	5280
aattccataa	ccct	ctgt	ta	act	gca	at	gta	5340
tcagtcagg	gtt	gtc	gt	tc	act	gt	gt	5400
acccatggaa	gtt	ccca	aa	gtt	ttt	tc	atc	taacaa
aggcttagta	tcg	ctt	ttt	tct	gtt	act	cttgc	5460
tgattcacgt	tag	cgt	gtg	tac	act	act	gt	5520
tgattcacgt	tag	cgt	gtg	tac	act	act	gt	5580

caggctcctc	tgaagagact	ttggtgagat	gaacgtgagg	taaaaatttc	gttcggaaaa	5640
aagtgcata	tgtgtggta	tttattttt	atgttctttt	tttaaatctg	gggttattgt	5700
ctgtgctttg	ggagaaaatgc	actagctctg	caattcccag	ctgggcaagt	gtgtctctag	5760
tatctccagg	aactgataca	ctggtcctg	taaggcaaac	agcatgttag	cccgacagga	5820
agagggggcc	cacttcaca	ttcccggtga	caactgaccgt	ccccagctgc	ccccctcgcca	5880
cctctgcctg	cactgccttc	tgtcaccgtg	ggaaaaggag	gctgtatggtt	ctctacacca	5940
tccacccgt	gaatccctgc	gtgggagagc	atcagggccc	accaggggag	tggggatggg	6000
gctcaggggc	tgttcatgcc	catctgagca	aacccttct	ctcttccatc	cactttgcc	6060
tccttaggaaa	aaaaaagtca	gtggccctt	tttcctcaga	tatcaagaac	tcccaagtgt	6120
ttaaaccgta	tgctggagtc	agtggttggg	acagacagga	gcccaagact	gaagccagcc	6180
cttgcccttc	gtgtcccttc	ccaaactctgg	tgctggagta	atggggtgct	ctgcattttg	6240
atggggagca	aggggggacc	ccccctgtag	gagtatcggc	ctctccctg	ccccctaccc	6300
tctctcggtgg	accaaagtct	ccagcagaag	ggactcatca	taagactgac	gactccccca	6360
cctccacccca	cacaccgagt	gtcatcagtc	ctaaaggcag	ggaaacgctc	acagaattct	6420
gcccacgggt	tagatgtggg	gagaaggata	ttctcagctc	cagagtgatt	aggtgatcag	6480
ccagaaacta	aggcaaggtg	acaagcagca	gcctggagtc	acagttggtc	ccaggcgtgt	6540
gggcactaag	cagcctctgg	agacatgcgg	gcagttgagg	atgcaaggac	acagtgagtg	6600
agtggcgctc	ctttttgggg	tcctccagcc	tctagtcaag	ccccaggttc	gtaaaatatgt	6660
ttgttattaca	ttttaaaacc	tgtatcaaca	gtcacattta	agctccctat	tggtttaaag	6720
aaaattcgta	ctccaggtaa	ctttttccca	ttcgacctcc	tatagagaca	atatgcagtg	6780
tgtcatttca	cagtctcagt	ccctgtgaac	agtggctgac	accggtgcca	gggctgaccc	6840
gctacactca	aactcctaaa	ctgggctgcc	tctaaactgcc	tcctggaaag	ccacccgagc	6900
cactcggtct	ctttgtgcct	aaacatgaaa	ggtgaaaatt	ggagaacagg	gaagctcgta	6960
agttggagtc	attgtacagg	cagggatctt	tgatcatttt	gttgcttctg	gaatttattt	7020
aatttttttt	tttttgagac	agagcgagac	tccacctcaa	aaaaaaaaaa	aaaaagacaa	7080
gagcagtata	atctgcctct	gtttctaaac	tggacaaaga	gattttctta	aagtttctat	7140
catctccctt	ctgacagggtt	ctacagtgtg	gtctgaagca	cctgtaatgt	cagagccctt	7200
gtctggccct	tggggcagg	tgaacgaaag	cagtggagcc	tctcaccttc	cagtagcctc	7260
tcacatttctt	attttaccat	ttttgtccta	attaaggtag	cctagctgat	tctagaagac	7320
agccatccta	cgtgcacccc	cacccgtgt	ccacatcttc	tccaggcagg	tttcaaccta	7380
tcagcagact	cagggcacaca	ctggggcaca	gatagagaaq	caggcggcag	cagtgcctc	7440

agacccaccc	agggagagct	gtgatgggtt	ctgcccagat	actctgctcg	cccacccaca	7500
agggagcaat	agcttatatt	tgtacattag	ttttaccaag	cactttetct	tctaaccctc	7560
acaacaattc	tatgaaatta	gctggggaga	tactgtcctt	attttcaca	gctgaagaaa	7620
ccaaagcttt	gggaagttt	tgacttctct	gagatcacag	ctggtgatag	aaggagctgg	7680
gacacgcgct	tgggttgact	ggcttctggt	tttggttctc	tggcttctag	tgctggaaga	7740
agccctctct	ttcccttctc	tttcctcagt	agcatctgac	tctttcata	agcaaacagc	7800
tgtataaaca	aagccccat	tttggtcaag	cacagggtga	atgtgatatt	gttcccacaa	7860
ccttattctc	cactcaacag	ccgcctggct	ttggggaaaga	ggccgccttc	aggtgacagt	7920
gcagctgtcc	aggtggccgt	gcactgaacc	aggctgaggg	agacaaaaac	ccgcagacc	7980
ccgcgcctt	tcagcgtcca	gttaactgca	gaagtttagg	ctcacctcaa	agatgtctag	8040
ttttccaag	ttacaataca	gcagtttcct	acagaacacc	ccottcctca	attgccaagg	8100
ggccgcatcg	cacggcatca	ggccaccact	gcaggccagc	agattccacc	ccaggaacgg	8160
tcatgaactc	agccttgc	tcaacgaggg	gcgtaacatt	tccttacagt	caagccccat	8220
caactagaag	tgcttattac	ttttaggatt	aaaaaaagtaa	taacagactt	tgacttaata	8280
ctctgtcttt	tcagaggcaa	agtgggtggg	tagaggggag	ctttaaaaat	agaagtacaa	8340
aacaacatcc	tggaaacata	tgacccaga	tggaataatg	tcacattccc	cagtgcagat	8400
aatgggctgc	tgctggctct	gtgggtgtctg	tctgcagaag	atttgctcag	tcaaggaat	8460
tcaagtggtg	agaccttcc	accatgggtg	gtaagagaaa	cctgccttca	ccaaaatctc	8520
tgaaggggaa	agaagtggag	agaaaggttt	gcttcacttc	ggggactgca	gtttgagaaa	8580
taaaaggat	acagagatat	ctgcactttg	tagaaaggc	aagattattt	gcttataatct	8640
gaagggaggt	gggtggtttt	gctggatgtt	tggtctgaaa	gagttacttt	tgataaaagtt	8700
aatctaattt	tagttatatt	ttctgtgtgc	tttttttaa	ttactaagaa	aaaaattggt	8760
gagttcagta	gctttggtat	tatgagtgca	aatcataata	gctccaatgt	aaaaaaaaaa	8820
atcaaaaagta	taacttgtca	cttaatgtta	gaaaattgcc	taaaatgcag	tgtaataaaat	8880
aatctctgtta	ccaaatagta	atttaaatgg	ggttaatttc	tgcaaggaaa	atgtactgtt	8940
tttatgtttc	caacccttt	gaattaaaat	aaaaacaact	tctttctaa	g	8991

&lt;210&gt; 13

&lt;211&gt; 5694

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 13

ggaaaggagc	gaaggagcga	aggagcaagc	ggagcggccg	tcgccccaa	caagccgcgc	60
tgcccaaccct	cccgccccgc	cgcgcctctg	tccgcctgt	ctagcagcgg	ggcccagcat	120

ggtcatggcg gatggccccga ggcaacttgca gcgcgggcccgtccgggtgg ggttctacga 180  
 catcgagggc acgctgggc aaggcaactt cgctgtggtg aagctgggc ggcacccgat 240  
 caccaagacg gaggtggcaa taaaaataat cgataagtct cagctggatg cagtgaacct 300  
 tgagaaaatc taccgagaag tacaataat gaaaatgtta gaccaccctc acataatcaa 360  
 actttatca gtaatggaga cccaaatgtt gttgtacctt gtgacagaat atgccaat 420  
 tggagaaatt tttgactatc ttgctaattca tggccggta aatgagtctg aagccaggcg 480  
 aaaattctgg caaatccgt ctgctgttga ttattgtcat ggtcggaga ttgtgcaccg 540  
 tgacctcaaa gctgaaaatc tcctgctggta taacaacatg aatataaaaa tagcagatt 600  
 cgggtttggaa aatttcttta aagtggta actgctggca acatgggtgt gcagcccccc 660  
 ttatgcagcc ccagaagtct ttgaagggc gcaagtatgaa ggaccacagc tggacatctg 720  
 gagtatggga gttgttctt atgtccttgc ctgtggagct ctggccctttg atggaccgac 780  
 tcttccaatt ttgaggcaga gggttctggta aggaagattc cggattccgt atttcatgtc 840  
 agaagattgc gggcacctta tccgaaggat gttggcccta gaccatcca aacggctaac 900  
 catagcccaa atcaaggagc ataaatggat gtcatacgaa gttcctgtcc agagacctgt 960  
 tctctatcea caagagcaag aaaatgagcc atccatcggtt gaggtaatg agcagggtct 1020  
 gcgactgatg cacagcccttgc gaatagatca gcagaaaaacc attgagtctt tgcagaacaa 1080  
 gagctataac cactttgttgc ccatttattt ctgtgggtg gagcgcctga aatcacatcg 1140  
 gagcagtttc ccagtggagc agagacttga tggccggcag cgtccgccta gcaccattgc 1200  
 tgagcaaaca gttgccaagg cacagactgt ggggttccca gtgaccatgc attcaccgaa 1260  
 catgaggctg ctgcgatctg ccctcctccc ccaggcatcc aacgtggagg ccttttctt 1320  
 tccagcatct ggctgtcagg cggaaagctgc attcatggaa gaagagtgtg tggacactcc 1380  
 aaaggtcaat ggctgtctgc ttgaccctgt gcctcctgtc ctggtgcggaa agggatgcca 1440  
 gtcactgccc agcaacatga tggagacctc cattgacgaa gggctggaga cagaaggaga 1500  
 ggccgaggaa gaccccgctc atgccttga ggcatttcag tccacacgca gcgggcagag 1560  
 acggcacact ctgtcagaag tgaccaatca actggtcgtg atgcctgggg cagggaaaaat 1620  
 tttctccatg aatgacagcc cctcccttga cagtgtggac tctgagatgt atatgggtc 1680  
 ttttcagagg gacctgaact ttctggaaaga caacccttcc cttaaggaca tcatgttagc 1740  
 caatcagcct tcaccccgca tgacatctcc cttcataagc ctgagaccta ccaacccagc 1800  
 catgcaggct ctgagctccc agaaaacgaga ggtccacaac aggtctccag tgagcttcag 1860  
 agagggccgc agagcatcag atacctccct caccctggaa attgttagcat ttagacaaca 1920  
 ttttcagaat ctggctagaa ccaaaggaat tctagagttg aacaaagtgc agttgttga 1980

tgaacaaata ggacccggagg cagaccctaa cctggggccg ggggtccctc agtccagga	2040
ccttgctagc agtgccttc aggaagaagt ttctcagcag caggaaagcg tctccactct	2100
ccctgccagc gtgcattcccc agtgcgtcccc acggcagagc ctggagaccc agtacctgca	2160
gcacagactc cagaagccca gccttctgtc aaaggcccag aacacctgtc agctttattg	2220
caaagaacca ccgcggagcc ttgagcagca gctgcagggaa cataggctcc agcagaagcg	2280
actctttctt cagaagcagt ctcaactgca ggccttatttt aatcagatgc agatagcaga	2340
gagctcctac ccacagccaa gtcagcagct gccccttccc cgccaggaga ctccaccgcc	2400
ttctcagcag gccccaccgt tcagcctgac ccagccctg agcccccgtcc tggagccttc	2460
ctccgagcag atgcaataca gcctttctt cagccagttac caagagatgc agcttcagcc	2520
cctgcctcc acttccggtc cccgggctgc tcctcctctg cccacgcagc tacagcagca	2580
gcagccgcca ccgcaccac cccctccacc accacgacag ccaggagctg ccccaagcccc	2640
tttacagttc tcctatcaga ctgtgagct gccaagcgct gcttccctg cgccagacta	2700
tcccaactccc tgtcagtatc ctgtggatgg agcccagcag agogacctaa cggggccaga	2760
ctgtcccaga agcccaggac tgcaagaggc cccctccagc taogacccac tagccctctc	2820
ttagctacct ggactctttg attgtgaaat gctagacgct gtggatccac aacacaacgg	2880
gtatgtcctg gtgaattagt ctcagcacag gaattgaggt ggtcagggtg aaggaagagt	2940
gtatgttccct attttatttc cagcctttta aatttaaagc ttatttctt gcccctctcc	3000
taacggggag aaatcgagcc accaactgg aatcagaggg tctggctggg gtggatgttg	3060
cttcctcctg gttctgcccc accacaaagt tttctgtggc aagtgctgga acatagttgt	3120
aggctgaggc tcctgcctt cggtcgagtg gagcaagctc tcgagggcag cactgacaaa	3180
tgtgttccata agaagacatt cagacccagg tcttatgcag gattacatcc gtttattatc	3240
aaggcaacc ttggtaaaag cagaaagggt gtgtgttatt gcatatataat gggggaaaag	3300
gcaatataatt tttcactgaa gctgagcaac cacatattgc tacaaggcaa atcaagaaga	3360
catcaggaaa tcagatgcac aggaaataaa ggaaagctgt gctttgtcat tgaatcctaa	3420
gttcttagct gctgatgcaa gttgtcccc aaggccatca caaagcagtg gggcatgagc	3480
tgtgtttcag gggccactaa ataacagctg gtactgaccc cagaaaccgc cttcatctcc	3540
attcggaaac aggtgacaca ccccttcaga aggtgcctg ggttgccgag tgtcagaaaa	3600
tactcaggac tccagaggtg tcacacgtgg aactgacagg agacccgcca cctggagggc	3660
agggggcaag aaactcaaga acgcatcaag agcaccagcc ctggggccagg gaagacaggc	3720
tcttcctgca gtttctcggt gacactgctg gcttgccggc agtcggtctc cagggtacct	3780
gttgtcttctt ttccgatgtta ataaactactt tgaccttaca ctatatgttg ctatgtttt	3840

attgagctt	gtatatttgg	acagtttcat	ataggctta	gagattttaa	ggacatgata	3900
aatgaactt	tctgtcccat	gtgaagtgg	agtgcggtgc	cttccccca	gatcatgct	3960
taattcttc	tttctgttag	aaaccaacag	tttccattn	tgtcaatgct	aatccaaag	4020
tcacttcaga	gtttgtttc	caccatgtgg	gaatcagcat	tcttaattc	gttaaagttt	4080
tgacttgtaa	tgaaatgttc	aagtattaca	gcaatattca	aagaaagaac	cacagatgtg	4140
ttaaccattt	aagcagatca	tctgccaaac	attatattac	taataaaaact	taaccaacac	4200
ttacaattca	gtcatcaaag	taagtaaaaa	ttagatgcta	cagctagcta	actgtatccc	4260
tagaaatgat	gaataatttgc	ccatttggac	agttaacatc	caggtgttac	aaagtcagtg	4320
ttaattctaa	agatgatcat	ttctgccctt	tagaatggct	tgtcccatca	gcagatgaat	4380
gtgttaagca	caaagcatct	tccttaaagc	acaaagagag	ggactaactg	atgctgcac	4440
tagaaaacac	ctttaagtttgc	ccttcctct	ttgttagtttgc	cgttcaggca	ggtgcacgtgt	4500
ggaaagtcta	gggggttcca	ttctggccat	gcgagcccag	ctccctaccaa	cgtcggtAAC	4560
tttagcagtc	cctgttgctg	gccagagact	gcctggtcgc	cagcgctcac	catgggtgcc	4620
aggatgcttc	gcagaggcac	tgtgctcacg	gttggacttg	gtgtcagtg	gaaagggcag	4680
tgtggggact	gtcatttttgc	tgattnaata	acacacagtgc	aaaatccagg	aagaatgaat	4740
taagcttctt	ctggagtttgc	tttattcctg	ctcggttca	agattgtat	tttcgtgaaa	4800
taaagaacat	catttcatttgc	aagagatcat	ttoattaaga	tctctaatct	gttttgagtc	4860
tttacaaaat	agccagtttat	aaaatggggc	ttgattttgtt	tagactgaag	gaagacgttt	4920
tcccaaaata	tactacagaa	gtgttacaat	atttgcgata	ttaaaatgcc	tgcagattga	4980
aaatgggggc	cactcatttc	agaactgcag	gaatggtgta	gttacagatc	gacataaaact	5040
cctgcccccc	aacaatgcca	tgagctgctt	agcccaggag	acctgggagc	tatggcagga	5100
cggtaggccc	agccgatgag	ggactgcaga	gaggctactg	gaaggttaag	gaccagaga	5160
gaaatcgaga	ggtgcctac	agcagccagg	cctatcagga	tccgtcacac	acggcagcgg	5220
cgtggacacc	ggcctgatgc	agagcgtgac	ccctcctgct	gggacctgtg	ttgttaagtc	5280
ctatttgttt	atcttggta	tttcaagcag	aaatcaat	attccataac	cctctgtatt	5340
gactgcaatg	taagctgctg	aggagactgg	ttctgttgg	cagtcagtg	tttgctcagc	5400
cctgtctgtat	cacctgtgt	gctctgtccc	taactagtga	cccatggaaag	cttccaagca	5460
gttttctctt	catcaactact	aacaaacgaa	acactaagaa	ggcttagtat	cgctctttt	5520
ctgcggggct	actctgaagt	actgacttgc	tttccagtct	gattcacgtt	agcagtgtgt	5580
acactactgt	atcatcatca	gcttcatcac	cctgtaaaacc	aggctcctct	gaagagactt	5640
tggtagatg	aacgtgaggt	aaaaatttgc	ttcggcaaaa	aaaaaaaaaa	aaaa	5694

<210> 14  
 <211> 786  
 <212> PRT  
 <213> Homo sapiens  
 <400> 14

Met Val Ile Met Ser Glu Phe Ser Ala Asp Pro Ala Gly Gln Gln  
 1 5 10 15

Gly Gln Gln Lys Pro Leu Arg Val Gly Phe Tyr Asp Ile Glu Arg Thr  
 20 25 30

Leu Gly Lys Gly Asn Phe Ala Val Val Lys Leu Ala Arg His Arg Val  
 35 40 45

Thr Lys Thr Gln Val Ala Ile Lys Ile Ile Asp Lys Thr Arg Leu Asp  
 50 55 60

Ser Ser Asn Leu Glu Lys Ile Tyr Arg Glu Val Gln Leu Met Lys Leu  
 65 70 75 80

Leu Asn His Pro His Ile Ile Lys Leu Tyr Gln Val Met Glu Thr Lys  
 85 90 95

Asp Met Leu Tyr Ile Val Thr Glu Phe Ala Lys Asn Gly Glu Met Phe  
 100 105 110

Asp Tyr Leu Thr Ser Asn Gly His Leu Ser Glu Asn Glu Ala Arg Lys  
 115 120 125

Lys Phe Trp Gln Ile Leu Ser Ala Val Glu Tyr Cys His Asp His His  
 130 135 140

Ile Val His Arg Asp Leu Lys Thr Glu Asn Leu Leu Leu Asp Gly Asn  
 145 150 155 160

Met Asp Ile Lys Leu Ala Gly Thr Glu Asp Phe Gly Phe Gly Asn Phe  
 165 170 175

Tyr Lys Ser Gly Glu Pro Leu Ser Thr Trp Cys Gly Ser Pro Pro Tyr  
 180 185 190

Ala Ala Pro Glu Val Phe Glu Gly Lys Glu Tyr Glu Gly Pro Gln Leu  
 195 200 205

Asp Ile Trp Ser Leu Gly Val Val Leu Tyr Val Leu Val Cys Gly Ser

210

215

220

Leu Pro Phe Asp Gly Pro Asn Leu Pro Thr Leu Arg Gln Arg Val Leu  
225 230 235 240

Glu Gly Arg Phe Arg Ile Pro Phe Phe Met Ser Gln Asp Cys Glu Ser  
245 250 255

Leu Ile Arg Arg Met Leu Val Val Asp Pro Ala Arg Arg Ile Thr Ile  
260 265 270

Ala Gln Ile Arg Gln His Arg Trp Met Arg Ala Glu Pro Cys Leu Pro  
275 280 285

Gly Pro Ala Cys Pro Ala Phe Ser Ala His Ser Tyr Thr Ser Asn Leu  
290 295 300

Gly Asp Tyr Asp Glu Gln Ala Leu Gly Ile Met Gln Thr Leu Gly Val  
305 310 315 320

Asp Arg Gln Arg Thr Val Glu Ser Leu Gln Asn Ser Ser Tyr Asn His  
325 330 335

Phe Ala Ala Ile Tyr Tyr Leu Leu Leu Glu Arg Leu Lys Glu Tyr Arg  
340 345 350

Asn Ala Gln Cys Ala Arg Pro Gly Pro Ala Arg Gln Pro Arg Pro Arg  
355 360 365

Ser Ser Asp Leu Ser Gly Leu Glu Val Pro Gln Glu Gly Leu Ser Thr  
370 375 380

Asp Pro Phe Arg Pro Ala Leu Leu Cys Pro Gln Pro Gln Thr Leu Val  
385 390 395 400

Gln Ser Val Leu Gln Ala Glu Met Asp Cys Glu Leu Gln Ser Ser Leu  
405 410 415

Gln Trp Pro Leu Phe Phe Pro Val Asp Ala Ser Cys Ser Gly Val Phe  
420 425 430

Arg Pro Arg Pro Val Ser Pro Ser Ser Leu Leu Asp Thr Ala Ile Ser  
435 440 445

Glu Glu Ala Arg Gln Gly Pro Gly Leu Glu Glu Gln Asp Thr Gln  
450 455 460

Glu Ser Leu Pro Ser Ser Thr Gly Arg Arg His Thr Leu Ala Glu Val  
 465 470 475 480

Ser Thr Arg Leu Ser Pro Leu Thr Ala Pro Cys Lys Phe Val Ser Pro  
 485 490 495

Ser Thr Thr Ala Ser Pro Ala Glu Gly Thr Ser Ser Asp Ser Cys Leu  
 500 505 510

Thr Phe Ser Ala Ser Lys Ser Pro Ala Gly Leu Ser Gly Thr Pro Ala  
 515 520 525

Thr Gln Gly Leu Leu Gly Ala Cys Ser Pro Val Arg Leu Ala Ser Pro  
 530 535 540

Phe Leu Gly Ser Gln Ser Ala Thr Pro Val Leu Gln Ala Gln Gly Gly  
 545 550 555 560

Leu Gly Gly Ala Val Leu Leu Pro Val Ser Phe Gln Glu Gly Arg Arg  
 565 570 575

Ala Ser Asp Thr Ser Leu Thr Gln Gly Leu Lys Ala Phe Arg Gln Gln  
 580 585 590

Leu Arg Lys Thr Thr Arg Thr Lys Gly Phe Leu Gly Leu Asn Lys Ile  
 595 600 605

Lys Gly Leu Ala Arg Gln Val Cys Gln Ala Pro Ala Ser Arg Ala Ser  
 610 615 620

Arg Gly Gly Leu Ser Pro Phe His Ala Pro Ala Gln Ser Pro Gly Leu  
 625 630 635 640

His Gly Gly Ala Ala Gly Ser Arg Glu Gly Trp Ser Leu Leu Glu Glu  
 645 650 655

Val Leu Glu Gln Gln Arg Leu Leu Gln Leu Gln His His Pro Ala Ala  
 660 665 670

Ala Pro Gly Cys Ser Gln Ala Pro Gln Pro Ala Pro Ala Pro Phe Val  
 675 680 685

Ile Ala Pro Cys Asp Gly Pro Gly Ala Ala Pro Leu Pro Ser Thr Leu  
 690 695 700

Leu Thr Ser Gly Leu Pro Leu Leu Pro Pro Pro Leu Leu Gln Thr Gly

705

710

715

720

Ala Ser Pro Val Ala Ser Ala Ala Gln Leu Leu Asp Thr His Leu His  
725 730 735

Ile Gly Thr Gly Pro Thr Ala Leu Pro Ala Val Pro Pro Pro Arg Leu  
740 745 750

Ala Arg Leu Ala Pro Gly Cys Glu Pro Leu Gly Leu Leu Gln Gly Asp  
755 760 765

Cys Glu Met Glu Asp Leu Met Pro Cys Ser Leu Gly Thr Phe Val Leu  
770 775 780

Val Gln  
785

<210> 15  
<211> 783  
<212> PRT  
<213> Homo sapiens

<400> 15

Met Val Ile Met Ser Glu Phe Ser Ala Asp Pro Ala Gly Gln Gln  
1 5 10 15

Gly Gln Gln Lys Pro Leu Arg Val Gly Phe Tyr Asp Ile Glu Arg Thr  
20 25 30

Leu Gly Lys Gly Asn Phe Ala Val Val Lys Leu Ala Arg His Arg Val  
35 40 45

Thr Lys Thr Gln Val Ala Ile Lys Ile Ile Asp Lys Thr Arg Leu Asp  
50 55 60

Ser Ser Asn Leu Glu Lys Ile Tyr Arg Glu Val Gln Leu Met Lys Leu  
65 70 75 80

Leu Asn His Pro His Ile Ile Lys Leu Tyr Gln Val Met Glu Thr Lys  
85 90 95

Asp Met Leu Tyr Ile Val Thr Glu Phe Ala Lys Asn Gly Glu Met Phe  
100 105 110

Asp Tyr Leu Thr Ser Asn Gly His Leu Ser Glu Asn Ala Arg Lys  
115 120 125

Lys Phe Trp Gln Ile Leu Ser Ala Val Glu Tyr Cys His Asp His His  
130 135 140

Ile Val His Arg Asp Leu Lys Thr Glu Asn Leu Leu Leu Asp Gly Asn  
145 150 155 160

Met Asp Ile Lys Leu Ala Asp Phe Gly Phe Gly Asn Phe Tyr Lys Ser  
165 170 175

Gly Glu Pro Leu Ser Thr Trp Cys Gly Ser Pro Pro Tyr Ala Ala Pro  
180 185 190

Glu Val Phe Glu Gly Lys Glu Tyr Glu Gly Pro Gln Leu Asp Ile Trp  
195 200 205

Ser Leu Gly Val Val Leu Tyr Val Leu Val Cys Gly Ser Leu Pro Phe  
210 215 220

Asp Gly Pro Asn Leu Pro Thr Leu Arg Gln Arg Val Leu Glu Gly Arg  
225 230 235 240

Phe Arg Ile Pro Phe Phe Met Ser Gln Asp Cys Glu Ser Leu Ile Arg  
245 250 255

Arg Met Leu Val Val Asp Pro Ala Arg Arg Ile Thr Ile Ala Gln Ile  
260 265 270

Arg Gln His Arg Trp Met Arg Ala Glu Pro Cys Leu Pro Gly Pro Ala  
275 280 285

Cys Pro Ala Phe Ser Ala His Ser Tyr Thr Ser Asn Leu Gly Asp Tyr  
290 295 300

Asp Glu Gln Ala Leu Gly Ile Met Gln Thr Leu Gly Val Asp Arg Gln  
305 310 315 320

Arg Thr Val Glu Ser Leu Gln Asn Ser Ser Tyr Asn His Phe Ala Ala  
325 330 335

Ile Tyr Tyr Leu Leu Glu Arg Leu Lys Glu Tyr Arg Asn Ala Gln  
340 345 350

Cys Ala Arg Pro Gly Pro Ala Arg Gln Pro Arg Pro Arg Ser Ser Asp  
355 360 365

Leu Ser Gly Leu Glu Val Pro Gln Glu Gly Leu Ser Thr Asp Pro Phe  
370 375 380

Arg Pro Ala Leu Leu Cys Pro Gln Pro Gln Thr Leu Val Gln Ser Val  
385 390 395 400

Leu Gln Ala Glu Met Asp Cys Glu Leu Gln Ser Ser Leu Gln Trp Pro  
405 410 415

Leu Phe Phe Pro Val Asp Ala Ser Cys Ser Gly Val Phe Arg Pro Arg  
420 425 430

Pro Val Ser Pro Ser Ser Leu Leu Asp Thr Ala Ile Ser Glu Glu Ala  
435 440 445

Arg Gln Gly Pro Gly Leu Glu Glu Gln Asp Thr Gln Glu Ser Leu  
450 455 460

Pro Ser Ser Thr Gly Arg Arg His Thr Leu Ala Glu Val Ser Thr Arg  
465 470 475 480

Leu Ser Pro Leu Thr Ala Pro Cys Ile Val Val Ser Pro Ser Thr Thr  
485 490 495

Ala Ser Pro Ala Glu Gly Thr Ser Ser Asp Ser Cys Leu Thr Phe Ser  
500 505 510

Ala Ser Lys Ser Pro Ala Gly Leu Ser Gly Thr Pro Ala Thr Gln Gly  
515 520 525

Leu Leu Gly Ala Cys Ser Pro Val Arg Leu Ala Ser Pro Phe Leu Gly  
530 535 540

Ser Gln Ser Ala Thr Pro Val Leu Gln Ala Gln Gly Gly Leu Gly Gly  
545 550 555 560

Ala Val Leu Leu Pro Val Ser Phe Gln Glu Gly Arg Arg Ala Ser Asp  
565 570 575

Thr Ser Leu Thr Gln Gly Leu Lys Ala Phe Arg Gln Gln Leu Arg Lys  
580 585 590

Thr Thr Arg Thr Lys Gly Phe Leu Gly Leu Asn Lys Ile Lys Gly Leu  
595 600 605

Ala Arg Gln Val Cys Gln Val Pro Ala Ser Arg Ala Ser Arg Gly Gly  
610 615 620

Leu Ser Pro Phe His Ala Pro Ala Gln Ser Pro Gly Leu His Gly Gly  
 625 630 635 640

Ala Ala Gly Ser Arg Glu Gly Trp Ser Leu Leu Glu Glu Val Leu Glu  
 645 650 655

Gln Gln Arg Leu Leu Gln Leu Gln His His Pro Ala Ala Ala Pro Gly  
 660 665 670

Cys Ser Gln Ala Pro Gln Pro Ala Pro Ala Pro Phe Val Ile Ala Pro  
 675 680 685

Cys Asp Gly Pro Gly Ala Ala Pro Leu Pro Ser Thr Leu Leu Thr Ser  
 690 695 700

Gly Leu Pro Leu Leu Pro Pro Pro Leu Leu Gln Thr Gly Ala Ser Pro  
 705 710 715 720

Val Ala Ser Ala Ala Gln Leu Leu Asp Thr His Leu His Ile Gly Thr  
 725 730 735

Gly Pro Thr Ala Leu Pro Ala Val Pro Pro Pro Arg Leu Ala Arg Leu  
 740 745 750

Ala Pro Gly Cys Glu Pro Leu Gly Leu Leu Gln Gly Asp Cys Glu Met  
 755 760 765

Glu Asp Leu Met Pro Cys Ser Leu Gly Thr Phe Val Leu Val Gln  
 770 775 780

<210> 16  
 <211> 1371  
 <212> PRT  
 <213> Homo sapiens

<400> 16

Ala Gln Gly Trp Gln Ala Val Gly Thr Gly Ala Arg Ala Ser Ala Val  
 1 5 10 15

Ala Ala Val Pro Ser Val Ser Leu Leu Ser Gly Ala Ser Ser Ser Ser  
 20 25 30

Leu Ala Trp Cys Gly Leu Ala Thr Gly Ala Leu Gly Ala Gly Ala Arg  
 35 40 45

Gly Ile Pro Glu Leu Arg Gly Ala Ala Gly Ala Gly Gly Ala Ala Gly  
 50 55 60

Ala Gly Thr Gly Gly Ala Gly Pro Ala Gly Arg Leu Leu Pro Pro Pro  
 65 70 75 80

Ala Pro Gly Ser Pro Ala Ala Pro Ala Ala Val Ser Pro Ala Ala Gly  
 85 90 95

Gln Pro Arg Pro Pro Ala Pro Ala Ser Arg Gly Pro Met Pro Ala Arg  
 100 105 110

Ile Gly Tyr Tyr Glu Ile Asp Arg Thr Ile Gly Lys Gly Asn Phe Ala  
 115 120 125

Val Val Lys Arg Ala Thr His Leu Val Thr Lys Ala Lys Val Ala Ile  
 130 135 140

Lys Ile Ile Asp Lys Thr Gln Leu Asp Glu Glu Asn Leu Lys Lys Ile  
 145 150 155 160

Phe Arg Glu Val Gln Ile Met Lys Met Leu Cys His Pro His Ile Ile  
 165 170 175

Arg Leu Tyr Gln Val Met Glu Thr Glu Arg Met Ile Tyr Leu Val Thr  
 180 185 190

Glu Tyr Ala Ser Gly Gly Glu Ile Phe Asp His Leu Val Ala His Gly  
 195 200 205

Arg Met Ala Glu Lys Glu Ala Arg Arg Lys Phe Lys Gln Ile Val Thr  
 210 215 220

Ala Val Tyr Phe Cys His Cys Arg Asn Ile Val His Arg Asp Leu Lys  
 225 230 235 240

Ala Glu Asn Leu Leu Asp Ala Asn Leu Asn Ile Lys Ile Ala Asp  
 245 250 255

Phe Gly Phe Ser Asn Leu Phe Thr Pro Gly Gln Leu Leu Lys Thr Trp  
 260 265 270

Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe Glu Gly Lys Glu  
 275 280 285

Tyr Asp Gly Pro Lys Val Asp Ile Trp Ser Leu Gly Val Val Leu Tyr  
 290 295 300

Val Leu Val Cys Gly Ala Leu Pro Phe Asp Gly Ser Thr Leu Gln Asn

305

310

315

320

Leu Arg Ala Arg Val Leu Ser Gly Lys Phe Arg Ile Pro Phe Phe Met  
325 330 335

Ser Thr Glu Cys Glu His Leu Ile Arg His Met Leu Val Leu Asp Pro  
340 345 350

Asn Lys Arg Leu Ser Met Glu Gln Ile Cys Lys His Lys Trp Met Lys  
355 360 365

Leu Gly Asp Ala Asp Pro Asn Phe Asp Arg Leu Ile Ala Glu Cys Gln  
370 375 380

Gln Leu Lys Glu Glu Arg Gln Val Asp Pro Leu Asn Glu Asp Val Leu  
385 390 395 400

Leu Ala Met Glu Asp Met Gly Leu Asp Lys Glu Gln Thr Leu Gln Ser  
405 410 415

Leu Arg Ser Asp Ala Tyr Asp His Tyr Ser Ala Ile Tyr Ser Leu Leu  
420 425 430

Cys Asp Arg His Lys Arg His Lys Thr Leu Arg Leu Gly Ala Leu Pro  
435 440 445

Ser Met Pro Arg Ala Leu Ala Phe Gln Ala Pro Val Asn Ile Gln Ala  
450 455 460

Glu Gln Ala Gly Thr Ala Met Asn Ile Ser Val Pro Gln Val Gln Leu  
465 470 475 480

Ile Asn Pro Glu Asn Gln Ile Val Glu Pro Asp Gly Thr Leu Asn Leu  
485 490 495

Asp Ser Asp Glu Gly Glu Pro Ser Pro Glu Ala Leu Val Arg Tyr  
500 505 510

Leu Ser Met Arg Arg His Thr Val Gly Val Ala Asp Pro Arg Thr Glu  
515 520 525

Val Met Glu Asp Leu Gln Lys Leu Leu Pro Gly Phe Pro Gly Val Asn  
530 535 540

Pro Gln Ala Pro Phe Leu Gln Val Ala Pro Asn Val Asn Phe Met His  
545 550 555 560

Asn Leu Leu Pro Met Gln Asn Leu Gln Pro Thr Gly Gln Leu Glu Tyr  
565 570 575

Lys Glu Gln Ser Leu Leu Gln Pro Pro Thr Leu Gln Leu Leu Asn Gly  
580 585 590

Met Gly Pro Leu Gly Arg Arg Ala Ser Asp Gly Gly Ala Asn Ile Gln  
595 600 605

Leu His Ala Gln Gln Leu Leu Lys Arg Pro Arg Gly Pro Ser Pro Leu  
610 615 620

Val Thr Met Thr Pro Ala Val Pro Ala Val Thr Pro Val Asp Glu Glu  
625 630 635 640

Ser Ser Asp Gly Glu Pro Asp Gln Glu Ala Val Gln Ser Ser Thr Tyr  
645 650 655

Lys Asp Ser Asn Thr Leu His Leu Pro Thr Glu Arg Phe Ser Pro Val  
660 665 670

Arg Arg Phe Ser Asp Gly Ala Ala Ser Ile Gln Ala Phe Lys Ala His  
675 680 685

Leu Glu Lys Met Gly Asn Asn Ser Ser Ile Lys Gln Leu Gln Gln Glu  
690 695 700

Cys Glu Gln Leu Gln Lys Met Tyr Gly Gly Gln Ile Asp Glu Arg Thr  
705 710 715 720

Leu Glu Lys Thr Gln Gln Gln His Met Leu Tyr Gln Gln Glu Gln His  
725 730 735

His Gln Ile Leu Gln Gln Ile Gln Asp Ser Ile Cys Pro Pro Gln  
740 745 750

Pro Ser Pro Pro Leu Gln Ala Ala Cys Glu Asn Gln Pro Ala Leu Leu  
755 760 765

Thr His Gln Leu Gln Arg Leu Arg Ile Gln Pro Ser Ser Pro Pro Pro  
770 775 780

Asn His Pro Asn Asn His Leu Phe Arg Gln Pro Ser Asn Ser Pro Pro  
785 790 795 800

Pro Met Ser Ser Ala Met Ile Gln Pro His Gly Ala Ala Ser Ser Ser

805

810

815

Gln Phe Gln Gly Leu Pro Ser Arg Ser Ala Ile Phe Gln Gln Gln Pro  
820 825 830

Glu Asn Cys Ser Ser Pro Pro Asn Val Ala Leu Thr Cys Leu Gly Met  
835 840 845

Gln Gln Pro Ala Gln Ser Gln Gln Val Thr Ile Gln Val Gln Glu Pro  
850 855 860

Val Asp Met Leu Ser Asn Met Pro Gly Thr Ala Ala Gly Ser Ser Gly  
865 870 875 880

Arg Gly Ile Ser Ile Ser Pro Ser Ala Gly Gln Met Gln Met Gln His  
885 890 895

Arg Thr Asn Leu Met Ala Thr Leu Ser Tyr Gly His Arg Pro Leu Ser  
900 905 910

Lys Gln Leu Ser Ala Asp Ser Ala Glu Ala His Ser Leu Asn Val Asn  
915 920 925

Arg Phe Ser Pro Ala Asn Tyr Asp Gln Ala His Leu His Pro His Leu  
930 935 940

Phe Ser Asp Gln Ser Arg Gly Ser Pro Ser Ser Tyr Ser Pro Ser Thr  
945 950 955 960

Gly Val Gly Phe Ser Pro Thr Gln Ala Leu Lys Val Pro Pro Leu Asp  
965 970 975

Gln Phe Pro Thr Phe Pro Pro Ser Ala His Gln Gln Pro Pro His Tyr  
980 985 990

Thr Thr Ser Ala Leu Gln Gln Ala Leu Leu Ser Pro Thr Pro Pro Asp  
995 1000 1005

Tyr Thr Arg His Gln Gln Val Pro His Ile Leu Gln Gly Leu Leu  
1010 1015 1020

Ser Pro Arg His Ser Leu Thr Gly His Ser Asp Ile Arg Leu Pro  
1025 1030 1035

Pro Thr Glu Phe Ala Gln Leu Ile Lys Arg Gln Gln Gln Gln Arg  
1040 1045 1050

Gln Gln Gln Gln Gln Gln Gln Gln Glu Tyr Gln Glu Leu  
1055 1060 1065

Phe Arg His Met Asn Gln Gly Asp Ala Gly Ser Leu Ala Pro Ser  
1070 1075 1080

Leu Gly Gly Gln Ser Met Thr Glu Arg Gln Ala Leu Ser Tyr Gln  
1085 1090 1095

Asn Ala Asp Ser Tyr His His His Thr Ser Pro Gln His Leu Leu  
1100 1105 1110

Gln Ile Arg Ala Gln Glu Cys Val Ser Gln Ala Ser Ser Pro Thr  
1115 1120 1125

Pro Pro His Gly Tyr Ala His Gln Pro Ala Leu Met His Ser Glu  
1130 1135 1140

Ser Met Glu Glu Asp Cys Ser Cys Glu Gly Ala Lys Asp Gly Phe  
1145 1150 1155

Gln Asp Ser Lys Ser Ser Ser Thr Leu Thr Lys Gly Cys His Asp  
1160 1165 1170

Ser Pro Leu Leu Leu Ser Thr Gly Gly Pro Gly Asp Pro Glu Ser  
1175 1180 1185

Leu Leu Gly Thr Val Ser His Ala Gln Glu Leu Gly Ile His Pro  
1190 1195 1200

Tyr Gly His Gln Pro Thr Ala Ala Phe Ser Lys Asn Lys Val Pro  
1205 1210 1215

Ser Arg Glu Pro Val Ile Gly Asn Cys Met Asp Arg Ser Ser Pro  
1220 1225 1230

Gly Gln Ala Val Glu Leu Pro Asp His Asn Gly Leu Gly Tyr Pro  
1235 1240 1245

Ala Arg Pro Ser Val His Glu His His Arg Pro Arg Ala Leu Gln  
1250 1255 1260

Arg His His Thr Ile Gln Asn Ser Asp Asp Ala Tyr Val Gln Leu  
1265 1270 1275

Asp Asn Leu Pro-Gly Met Ser Leu Val Ala Gly Lys Ala Leu Ser

1280

1285

1290

Ser Ala Arg Met Ser Asp Ala Val Leu Ser Gln Ser Ser Leu Met  
 1295 1300 1305

Gly Ser Gln Gln Phe Gln Asp Gly Glu Asn Glu Glu Cys Gly Ala  
 1310 1315 1320

Ser Leu Gly Gly His Glu His Pro Asp Leu Ser Asp Gly Ser Gln  
 1325 1330 1335

His Leu Asn Ser Ser Cys Tyr Pro Ser Thr Cys Ile Thr Asp Ile  
 1340 1345 1350

Leu Leu Ser Tyr Lys His Pro Glu Val Ser Phe Ser Met Glu Gln  
 1355 1360 1365

Ala Gly Val  
 1370

<210> 17  
 <211> 926  
 <212> PRT  
 <213> Homo sapiens  
 <400> 17

Met Val Met Ala Asp Gly Pro Arg His Leu Gln Arg Gly Pro Val Arg  
 1 5 10 15

Val Gly Phe Tyr Asp Ile Glu Gly Thr Leu Gly Lys Gly Asn Phe Ala  
 20 25 30

Val Val Lys Leu Gly Arg His Arg Ile Thr Lys Thr Glu Val Ala Ile  
 35 40 45

Lys Ile Ile Asp Lys Ser Gln Leu Asp Ala Val Asn Leu Glu Lys Ile  
 50 55 60

Tyr Arg Glu Val Gln Ile Met Lys Met Leu Asp His Pro His Ile Ile  
 65 70 75 80

Lys Leu Tyr Gln Val Met Glu Thr Lys Ser Met Leu Tyr Leu Val Thr  
 85 90 95

Glu Tyr Ala Lys Asn Gly Glu Ile Phe Asp Tyr Leu Ala Asn His Gly  
 100 105 110

Arg Leu Asn Glu Ser Glu Ala Arg Arg Lys Phe Trp Gln Ile Leu Ser  
 115 120 125

Ala Val Asp Tyr Cys His Gly Arg Lys Ile Val His Arg Asp Leu Lys  
 130 135 140

Ala Glu Asn Leu Leu Leu Asp Asn Asn Met Asn Ile Lys Ile Ala Asp  
 145 150 155 160

Phe Gly Phe Gly Asn Phe Phe Lys Ser Gly Glu Leu Leu Ala Thr Trp  
 165 170 175

Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Val Phe Glu Gly Gln Gln  
 180 185 190

Tyr Glu Gly Pro Gln Leu Asp Ile Trp Ser Met Gly Val Val Leu Tyr  
 195 200 205

Val Leu Val Cys Gly Ala Leu Pro Phe Asp Gly Pro Thr Leu Pro Ile  
 210 215 220

Leu Arg Gln Arg Val Leu Glu Gly Arg Phe Arg Ile Pro Tyr Phe Met  
 225 230 235 240

Ser Glu Asp Cys Glu His Leu Ile Arg Arg Met Leu Val Leu Asp Pro  
 245 250 255

Ser Lys Arg Leu Thr Ile Ala Gln Ile Lys Glu His Lys Trp Met Leu  
 260 265 270

Ile Glu Val Pro Val Gln Arg Pro Val Leu Tyr Pro Gln Glu Gln Glu  
 275 280 285

Asn Glu Pro Ser Ile Gly Glu Phe Asn Glu Gln Val Leu Arg Leu Met  
 290 295 300

His Ser Leu Gly Ile Asp Gln Gln Lys Thr Ile Glu Ser Leu Gln Asn  
 305 310 315 320

Lys Ser Tyr Asn His Phe Ala Ala Ile Tyr Phe Leu Leu Val Glu Arg  
 325 330 335

Leu Lys Ser His Arg Ser Ser Phe Pro Val Glu Gln Arg Leu Asp Gly  
 340 345 350

Arg Gln Arg Arg Pro Ser Thr Ile Ala Glu Gln Thr Val Ala Lys Ala  
 355 360 365

Gln Thr Val Gly Leu Pro Val Thr Met His Ser Pro Asn Met Arg Leu  
 370 375 380

Leu Arg Ser Ala Leu Leu Pro Gln Ala Ser Asn Val Glu Ala Phe Ser  
 385 390 395 400

Phe Pro Ala Ser Gly Cys Gln Ala Glu Ala Ala Phe Met Glu Glu Glu  
 405 410 415

Cys Val Asp Thr Pro Lys Val Asn Gly Cys Leu Leu Asp Pro Val Pro  
 420 425 430

Pro Val Leu Val Arg Lys Gly Cys Gln Ser Leu Pro Ser Asn Met Met  
 435 440 445

Glu Thr Ser Ile Asp Glu Gly Leu Glu Thr Glu Gly Glu Ala Glu Glu  
 450 455 460

Asp Pro Ala His Ala Phe Glu Ala Phe Gln Ser Thr Arg Ser Gly Gln  
 465 470 475 480

Arg Arg His Thr Leu Ser Glu Val Thr Asn Gln Leu Val Val Met Pro  
 485 490 495

Gly Ala Gly Lys Ile Phe Ser Met Asn Asp Ser Pro Ser Leu Asp Ser  
 500 505 510

Val Asp Ser Glu Tyr Asp Met Gly Ser Val Gln Arg Asp Leu Asn Phe  
 515 520 525

Leu Glu Asp Asn Pro Ser Leu Lys Asp Ile Met Leu Ala Asn Gln Pro  
 530 535 540

Ser Pro Arg Met Thr Ser Pro Phe Ile Ser Leu Arg Pro Thr Asn Pro  
 545 550 555 560

Ala Met Gln Ala Leu Ser Ser Gln Lys Arg Glu Val His Asn Arg Ser  
 565 570 575

Pro Val Ser Phe Arg Glu Gly Arg Arg Ala Ser Asp Thr Ser Leu Thr  
 580 585 590

Gln Gly Ile Val Ala Phe Arg Gln His Leu Gln Asn Leu Ala Arg Thr  
 595 600 605

Lys Gly Ile Leu Glu Leu Asn Lys Val Gln Leu Leu Tyr Glu Gln Ile  
 610 615 620

Gly Pro Glu Ala Asp Pro Asn Leu Ala Pro Ala Ala Pro Gln Leu Gln  
 625 630 635 640

Asp Leu Ala Ser Ser Cys Pro Gln Glu Glu Val Ser Gln Gln Gln Glu  
 645 650 655

Ser Val Ser Thr Leu Pro Ala Ser Val His Pro Gln Leu Ser Pro Arg  
 660 665 670

Gln Ser Leu Glu Thr Gln Tyr Leu Gln His Arg Leu Gln Lys Pro Ser  
 675 680 685

Leu Leu Ser Lys Ala Gln Asn Thr Cys Gln Leu Tyr Cys Lys Glu Pro  
 690 695 700

Pro Arg Ser Leu Glu Gln Gln Leu Gln Glu His Arg Leu Gln Gln Lys  
 705 710 715 720

Arg Leu Phe Leu Gln Lys Gln Ser Gln Leu Gln Ala Tyr Phe Asn Gln  
 725 730 735

Met Gln Ile Ala Glu Ser Ser Tyr Pro Gln Pro Ser Gln Gln Leu Pro  
 740 745 750

Leu Pro Arg Gln Glu Thr Pro Pro Pro Ser Gln Gln Ala Pro Pro Phe  
 755 760 765

Ser Leu Thr Gln Pro Leu Ser Pro Val Leu Glu Pro Ser Ser Glu Gln  
 770 775 780

Met Gln Tyr Ser Pro Phe Leu Ser Gln Tyr Gln Glu Met Gln Leu Gln  
 785 790 795 800

Pro Leu Pro Ser Thr Ser Gly Pro Arg Ala Ala Pro Pro Leu Pro Thr  
 805 810 815

Gln Leu Gln Gln Gln Pro  
 820 825 830

Arg Gln Pro Gly Ala Ala Pro Ala Pro Leu Gln Phe Ser Tyr Gln Thr  
 835 840 845

Cys Glu Leu Pro Ser Ala Ala Ser Pro Ala Pro Asp Tyr Pro Thr Pro  
 850 855 860

Cys Gln Tyr Pro Val Asp Gly Ala Gln Gln Ser Asp Leu Thr Gly Pro  
 865 870 875 880

Asp Cys Pro Arg Ser Pro Gly Leu Gln Glu Ala Pro Ser Ser Tyr Asp  
 885 890 895

Pro Leu Ala Leu Ser Glu Leu Pro Gly Leu Phe Asp Cys Glu Met Leu  
 900 905 910

Asp Ala Val Asp Pro Gln His Asn Gly Tyr Val Leu Val Asn  
 915 920 925

<210> 18

<211> 926

<212> PRT

<213> Homo sapiens

<400> 18

Met Val Met Ala Asp Gly Pro Arg His Leu Gln Arg Gly Pro Val Arg  
 1 5 10 15

Val Gly Phe Tyr Asp Ile Glu Gly Thr Leu Gly Lys Gly Asn Phe Ala  
 20 25 30

Val Val Lys Leu Gly Arg His Arg Ile Thr Lys Thr Glu Val Ala Ile  
 35 40 45

Lys Ile Ile Asp Lys Ser Gln Leu Asp Ala Val Asn Leu Glu Lys Ile  
 50 55 60

Tyr Arg Glu Val Gln Ile Met Lys Met Leu Asp His Pro His Ile Ile  
 65 70 75 80

Lys Leu Tyr Gln Val Met Glu Thr Lys Ser Met Leu Tyr Leu Val Thr  
 85 90 95

Glu Tyr Ala Lys Asn Gly Glu Ile Phe Asp Tyr Leu Ala Asn His Gly  
 100 105 110

Arg Leu Asn Glu Ser Glu Ala Arg Arg Lys Phe Trp Gln Ile Leu Ser  
 115 120 125

Ala Val Asp Tyr Cys His Gly Arg Lys Ile Val His Arg Asp Leu Lys  
 130 135 140

Ala Glu Asn Leu Leu Asp Asn Asn Met Asn Ile Lys Ile Ala Asp

145 150 155 160

Phe Gly Phe Gly Asn Phe Phe Lys Ser Gly Glu Leu Leu Ala Thr Trp  
165 170 175

Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Val Phe Glu Gly Gln Gln  
180 185 190

Tyr Glu Gly Pro Gln Leu Asp Ile Trp Ser Met Gly Val Val Leu Tyr  
195 200 205

Val Leu Val Cys Gly Ala Leu Pro Phe Asp Gly Pro Thr Leu Pro Ile  
210 215 220

Leu Arg Gln Arg Val Leu Glu Gly Arg Phe Arg Ile Pro Tyr Phe Met  
225 230 235 240

Ser Glu Asp Cys Glu His Leu Ile Arg Arg Met Leu Val Leu Asp Pro  
245 250 255

Ser Lys Arg Leu Thr Ile Ala Gln Ile Lys Glu His Lys Trp Met Leu  
260 265 270

Ile Glu Val Pro Val Gln Arg Pro Val Leu Tyr Pro Gln Glu Gln Glu  
275 280 285

Asn Glu Pro Ser Ile Gly Glu Phe Asn Glu Gln Val Leu Arg Leu Met  
290 295 300

His Ser Leu Gly Ile Asp Gln Gln Lys Thr Ile Glu Ser Leu Gln Asn  
310 315 320

Lys Ser Tyr Asn His Phe Ala Ala Ile Tyr Phe Leu Leu Val Glu Arg  
325 330 335

Leu Lys Ser His Arg Ser Ser Phe Pro Val Glu Gln Arg Leu Asp Gly  
340 345 350

Arg Gln Arg Arg Pro Ser Thr Ile Ala Glu Gln Thr Val Ala Lys Ala  
355 360 365

Gln Thr Val Gly Leu Pro Val Thr Met His Ser Pro Asn Met Arg Leu  
370 375 380

Leu Arg Ser Ala Leu Leu Pro Gln Ala Ser Asn Val Glu Ala Phe Ser  
385 390 395 400

Phe Pro Ala Ser Gly Cys Gln Ala Glu Ala Ala Phe Met Glu Glu Glu  
405 410 415

Cys Val Asp Thr Pro Lys Val Asn Gly Cys Leu Leu Asp Pro Val Pro  
420 425 430

Pro Val Leu Val Arg Lys Gly Cys Gln Ser Leu Pro Ser Asn Met Met  
435 440 445

Glu Thr Ser Ile Asp Glu Gly Leu Glu Thr Glu Gly Glu Ala Glu Glu  
450 455 460

Asp Pro Ala His Ala Phe Glu Ala Phe Gln Ser Thr Arg Ser Gly Gln  
465 470 475 480

Arg Arg His Thr Leu Ser Glu Val Thr Asn Gln Leu Val Val Met Pro  
485 490 495

Gly Ala Gly Lys Ile Phe Ser Met Asn Asp Ser Pro Ser Leu Asp Ser  
500 505 510

Val Asp Ser Glu Tyr Asp Met Gly Ser Val Gln Arg Asp Leu Asn Phe  
515 520 525

Leu Glu Asp Asn Pro Ser Leu Lys Asp Ile Met Leu Ala Asn Gln Pro  
530 535 540

Ser Pro Arg Met Thr Ser Pro Phe Ile Ser Leu Arg Pro Thr Asn Pro  
545 550 555 560

Ala Met Gln Ala Leu Ser Ser Gln Lys Arg Glu Val His Asn Arg Ser  
565 570 575

Pro Val Ser Phe Arg Glu Gly Arg Arg Ala Ser Asp Thr Ser Leu Thr  
580 585 590

Gln Gly Ile Val Ala Phe Arg Gln His Leu Gln Asn Leu Ala Arg Thr  
595 600 605

Lys Gly Ile Leu Glu Leu Asn Lys Val Gln Leu Leu Tyr Glu Gln Ile  
610 615 620

Gly Pro Glu Ala Asp Pro Asn Leu Ala Pro Ala Ala Pro Gln Leu Gln  
625 630 635 640

Asp Leu Ala Ser Ser Cys Pro Gln Glu Glu Val Ser Gln Gln Gln Glu

	645	650	655
Ser Val Ser Thr Leu Pro Ala Ser Val His Pro Gln Leu Ser Pro Arg			
660	665	670	
Gln Ser Leu Glu Thr Gln Tyr Leu Gln His Arg Leu Gln Lys Pro Ser			
675	680	685	
Leu Leu Ser Lys Ala Gln Asn Thr Cys Gln Leu Tyr Cys Lys Glu Pro			
690	695	700	
Pro Arg Ser Leu Glu Gln Gln Leu Gln Glu His Arg Leu Gln Gln Lys			
705	710	715	720
Arg Leu Phe Leu Gln Lys Gln Ser Gln Leu Gln Ala Tyr Phe Asn Gln			
725	730	735	
Met Gln Ile Ala Glu Ser Ser Tyr Pro Gln Pro Ser Gln Gln Leu Pro			
740	745	750	
Leu Pro Arg Gln Glu Thr Pro Pro Pro Ser Gln Gln Ala Pro Pro Phe			
755	760	765	
Ser Leu Thr Gln Pro Leu Ser Pro Val Leu Glu Pro Ser Ser Glu Gln			
770	775	780	
Met Gln Tyr Ser Pro Phe Leu Ser Gln Tyr Gln Glu Met Gln Leu Gln			
785	790	795	800
Pro Leu Pro Ser Thr Ser Gly Pro Arg Ala Ala Pro Pro Leu Pro Thr			
805	810	815	
Gln Leu Gln Gln Gln Pro			
820	825	830	
Arg Gln Pro Gly Ala Ala Pro Ala Pro Leu Gln Phe Ser Tyr Gln Thr			
835	840	845	
Cys Glu Leu Pro Ser Ala Ala Ser Pro Ala Pro Asp Tyr Pro Thr Pro			
850	855	860	
Cys Gln Tyr Pro Val Asp Gly Ala Gln Gln Ser Asp Leu Thr Gly Pro			
865	870	875	880
Asp Cys Pro Arg Ser Pro Gly Leu Gln Glu Ala Pro Ser Ser Tyr Asp			
885	890	895	

Pro Leu Ala Leu Ser Glu Leu Pro Gly Leu Phe Asp Cys Glu Met Leu  
900 905 910

Asp Ala Val Asp Pro Gln His Asn Gly Tyr Val Leu Val Asn  
915 920 925